Operation/Reference Guide

Enova DVX-2100HD

6x2 All-in-One Presentation Switcher

DVX-2100HD-SP

DVX-2100HD-T

All-In-One Presentation Switchers

Latest Release: 05/30/2011

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Important Safety Instructions

1. Read the instructions.
2. Keep the instructions.
3. Heed all warnings.
4. Follow the instructions.
5. Do not use this apparatus near water.
6. Clean this apparatus only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the grounding type plug. The grounding plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when mobbing the cart/apparatus combination to avoid injury from tipping-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

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Overview

The Enova DVX-2100HD-SP (**FG1905-01, -04**) and DVX-2100HD-T (**FG1905-02, -05**) All-in-One Presentation Switchers combine all of the components you need to control/automate any environment into a simple, flexible, comprehensive solution including control, multi-format inputs, audio and video switching, transcoding and scaling, local and remote distribution, plus audio mixing, and amplification - all in a single box (FIG. 1).

FIG. 1 Enova DVX-2100HD-SP

Common Application

The DVX-2100HD is an ideal solution when used to simplify A/V control and distribution in sophisticated presentation environments and conference rooms, including those supporting audio and video conferencing. It also fits well in classrooms and auditoriums that need multiple displays, or video previewing.

Audio Processing

The DVX-2100HD-SP features built-in audio mixing and amplification that outputs two channels at 25 Watts each into 8-ohms after passing through a mixer and an integrated equalizer to accommodate the size, furnishings, surfaces, and functional requirements in every room. There is also a stereo line level output with its own mixing and equalization settings.

The DVX-2100HD-T can deliver 70V and 100V amplified variable mono audio. This unit combines the left and right stereo audio signals into a single, Mono audio signal. For convenience, both 70V and 100V outputs are provided on separate connectors, however you should use only one output at a time.

Integrated Control

The DVX-2100HD includes the equivalent of a NetLinx 2100 central controller. The DVX also includes a front control panel for an added level of convenience. The DVX features standard RS-232, IR, digital I/O, and relay control ports for control over environment and third-party equipment.

AMXmeetingroom

The DVX-2100HD supports AMXmeetingroom. AMXmeetingroom allows for a more simplified configuration of your system by using a connected touch panel. AMXmeetingroom contains an easy-to-use Configuration Wizard which enables you to supply information about your system and its connections and uses the information provided to create an interface you can use to select devices and change settings. The AMXmeetingroom license is locked to the presentation switcher, and it cannot be copied to another master.

DVX-2100HD Specifications

DVX-2100HD Specifications	
Power:	110-240V, 47/63 Hz, 2.5A maximum AC supply
Memory:	• 64 MB SDRAM • 1 MB Non-volatile (NV) SRAM
Flash:	256 MB
Amplifier:	• 2 x 25W into 8 Ohms Class D stereo amplifier (capable of driving loads in the range of 2-8 ohms) (DVX-2100HD-SP) • 70V or 100V at 75W amplified variable mono audio (DVX-2100HD-T)
Integrated Controller:	Equivalent of a NetLinx 2100 central controller on-board.
Front Panel Components:	
LEDs:	• LINK/ACT (green) - Link/Activity LED blinks when receiving Ethernet data packets. • STATUS (green) - Status LED blinks to indicate that the system is programmed and communicating properly. • INPUT (yellow) - Input LED blinks to indicate that the Controller is receiving data. • OUTPUT (red) - Output LED blinks to indicate that the Controller is transmitting data. • RS-232 / 422 / 485 (red/yellow) - 3 sets of LEDs indicate that RS-232/422/485 Ports (1-3) are transmitting or receiving data. • RELAYS (red) - 4 LEDs indicate that one or more of the relay channels (1-4) are active (closed). • IR/SERIAL (red) - 4 LEDs indicate that one or more of the IR/Serial channels (1-4) are transmitting control data. • I/O (yellow) - 4 LEDs indicate that one or more of the I/O channels (1-4) are active.
MACROS pushbuttons:	4 back-lit pushbuttons allow access to macro functions. Macro functions are programmed via NetLinx code. See the *MACROS Pushbuttons* section on page 10 for details.
INPUT SELECT pushbuttons:	6 back-lit (multi-color) source selection pushbuttons select an Input (source). Pressing an INPUT SELECT button after pressing the VIDEO MENU button activates only the video for the source input. Similarly, pressing the AUDIO MENU button followed by an INPUT SELECT button activates only the audio on the source input. Pressing an input select button when not in a menu mode switches both the audio and video. See the *INPUT SELECT Pushbuttons* section on page 11 for details.
MIC SELECT pushbuttons:	2 back-lit (yellow) buttons for selecting a microphone. Each button lights to indicate that a microphone is selected.
LCD display:	Liquid crystal display (2 lines with 20 characters per line) indicates current volume level and displays the Video, Audio, and Tools menus. See the *LCD Display* section on page 12 for details.
VIDEO MENU pushbutton:	Press to access the Video menu on the LCD display. Press both the AUDIO and VIDEO menu buttons to access the Tools menu.
AUDIO MENU pushbutton:	Press to access the Audio menu on the LCD display. Press both the AUDIO and VIDEO menu buttons to access the Tools menu.
Navigational pushbuttons:	4 directional buttons for navigating the options in the Video and Audio menu (on the LCD display).
VIDEO MUTE pushbutton:	Press to mute/un-mute (enable/disable) all video output displays. Video Mute results in a blank screen on the output displays.
AUDIO MUTE pushbutton:	Press to mute/un-mute all audio outputs.

DVX-2100HD Specifications (Cont.)	
Rear Panel Components:	
RS-232/422/485 (PORT 1-3):	RS-232/422/485 Ports 1-3 provide serial control via DB9 (male) connectors: • XON/XOFF (transmit on/transmit off) • CTS/RTS (clear to send/ready to send) • 300-115,200 baud
RELAYS (PORT 4):	Port 4 provides Relay control via 8-pin 3.5 mm captive-wire connector. • 4-channel single-pole single-throw relay ports • Each relay is independently controlled • Supports up to 4 independent external relay devices • Channel range = 1-4 • Each relay can switch up to 24 VDC or 28 VAC @ 1 A • One 8-pin 3.5 mm mini-Phoenix (female) connectors provide relay termination
IR/SERIAL (PORTS 5-8):	Ports 5-8 provide IR/Serial control via 2-pin 3.5 mm captive-wire connectors. • Supports high-frequency carriers of up to 1.142 MHz. • 4 IR/Serial data signals can be generated simultaneously.
I/O (PORT 9):	Port 9 provides 4-channel binary I/O port for contact closure with each input being capable of voltage sensing. Input format is software selectable with interactive power sensing for IR ports.
AUDIO INPUTS:	4 3.5mm 5-pin captive-wire connectors receive up to four balanced/unbalanced line level audio inputs. • Nominal input level: +4 dBu (1.228 Vrms) balanced or -10 dBV (0.3162 Vrms) unbalanced • Maximum input level: 2 Vrms • Input impedance: >12k ohms unbalanced, >12k ohms balanced, DC coupled
MIC INPUTS:	2 3.5mm 3-pin captive-wire connectors receive up to 2 mono microphones (balanced or unbalanced audio and switchable Phantom Power).
AUDIO OUTPUTS:	• LINE: 1 3.5mm 5-pin captive-wire connector provides for fixed or variable, balanced or unbalanced, mono or stereo line level audio output. • AMP: 4-position captive wire connector provides amplified audio output with volume control (DVX-2100HD-SP only). • AMP: Two 2-position captive wire connector provides 70V or 100V mono amplified audio output (DVX-2100HD-T only).
VIDEO INPUTS (1-4):	4 DVI-I input connectors provide multi-format video inputs for up to four video sources. Each VIDEO INPUT connector supports RGBHV, S-video, composite video, component video, and DVI input. See the *Available Pixel Display and Refresh Rates* section on page 95 for information on supported video formats and resolutions.
UDM INPUTS (5-6):	2 RJ-45 inputs receive audio and video from up to two UDM Multi-Format Distribution Hubs or UPX wallplates. The DVX-2100HD is compatible with all UDM Multi-Format Distribution Hubs and UPX wallplates.
VIDEO OUTPUTS (1-2):	• 2 DVI-I Output connectors each provide simultaneous digital DVI and analog RGBHV video output (**FG1905-04** and **-05** only). You can view both Digital and Analog signals at the same time by using a DVI-I to DVI-D/HD15 splitter. See the *VIDEO OUTPUTS (1-2) and UDM OUTPUT* section on page 28 for details. • 1 DVI-I digital and analog Output connector and RGB analog only output connector (**FG1905-01** and **-02** only). See the *Power Connector/Switch/Fuse* section on page 31 for details.
UDM OUTPUT (1):	1 RJ-45 connector allows the DVX-2100HD to connect to a UDM Multi-Format Receiver. The Video on this output is identical to DVI output 1. You can configure the audio to follow either the AMP or Line outputs.

DVX-2100HD Specifications (Cont.)	
Rear Panel Components (Cont.):	
CONFIG DIP Switch:	4-position Master configuration DIP switch allows setting the onboard Master execution mode (PRD or normal). See the *CONFIG DIP Switch* section on page 16 for details.
PROGRAM Port:	Type-B USB connector connects the DVX-2100HD to a USB port on a PC. This USB connection is used to configure system settings. ***Note**: Not recommended for firmware updates or large file transfers. These more data-intensive operations are better handled via Ethernet.* See the *PROGRAM Port (Type-B USB)* section on page 17 for details.
ID Pushbutton:	Black ID pushbutton sets the NetLinx Device ID assignments of the Internal Control Device. It has no effect on the Internal Switcher Device. See the *ID Pushbutton* section on page 17 for details.
ETHERNET 10/100 Port:	RJ-45 connector provides TCP/IP communication. This is an Auto MDI/MDI-X enabled port, which allows you to use either straight-through or crossover Ethernet cables. The Ethernet Port LEDs show communication activity, connection status, speeds, and mode information: • SPD (speed) - Yellow LED lights On when the connection speed is 100 Mbps and turns Off when the speed is 10 Mbps. • L/A (link/activity) - Green LED lights On when the Ethernet cables are connected and terminated correctly, and blinks when receiving Ethernet data packets. See the *LAN (RJ-45)* section on page 18 for details.
AxLink Port:	1 3.5 mm captive-wire connector provides data and power to external control devices. The AxLink LED (green) indicates the state of the AxLink port. The AxLink port can be used to supply power to downstream AxLink-compatible devices as long as the maximum current draw is less than 2A. ***Note**: The AxLink port provides only limited power to connected AxLink devices. It is recommended to use an alternate power source when connecting AxLink devices to the DVX-2100HD.* See the *AxLink Port and LED (4-pin captive-wire)* section on page 19 for details.
Power Connector:	IEC Power cord connector: • 100-240V AC • 47-63Hz • 2.5A maximum
Operating Environment:	• Storage temperature: -10º C to 60º C (14º F to 140º F) • Operating Temperature: 0º C to 40º C (32º F to 104º F) • Operating Relative Humidity: 5% to 85% non-condensing
Supported Video Resolutions:	HD resolutions up to 1080p and RGB resolutions up to 1920 x 1200 @ 60Hz
Dimensions (HWD):	• 3.5" x 17" x 14.25" • 8.89cm x 43.18cm x 36.2cm
Weight:	• 14.7 lbs (6.67 kg)
Enclosure:	Metal with black matte finish
Certifications:	• RoHS • FCC Class B • CE • CB Scheme • UL

DVX-2100HD Specifications (Cont.)	
Included Accessories:	• 2 CC-NIRC, IR Emitter w/3.5mm Phoenix (**FG10-000-11**) • 2 CC-DVIM-VGAF, DVI to VGA Adapter (**FG10-2170-13**) • 2 Front Rack Mounting Brackets (62-1905-04) • Enova DVX-2100HD All-in-One Presentation Switcher Installation Guide (93-1950-01)
Optional Accessories:	• CC-DVI-5BNCM DVI to 5 BNC adapter cable (**FG10-2170-08**) • CC-DVI-RCA3M DVI to 3 Male RCA adapter cable for component and composite connections (**FG10-2170-09**) • CC-DVI-SVID DVI to S-Video adapter cable (**FG10-2170-10**) • CC-3.5ST5-RCA2F 2 RCA Female to 5-Pin Phoenix Cable (**FG10-003-20**) • UDM-RX02N Multi-Format Receiver with Native NetLinx Control (**FG1402-20**) • UPX-CS+A-US Composite Universal Transmitter Wallplate (US) (**FG1402-50-SW/SB/SA**) • UPX-CS+A-UK Composite Universal Transmitter Wallplate (UK) (**FG1402-50-KW/KB/KA**) • UPX-CS+A-EU Composite Universal Transmitter Wallplate (EU) (**FG1402-50-EW/EB/EA**) • UPX-RGB+A-US RGB Universal Transmitter Wallplate (US) (**FG1402-51-SW/SB/SA**) • UPX-RGB+A-UK RGB Universal Transmitter Wallplate (UK) (**FG1402-51-KW/KB/KA**) • UPX-RGB+A-EU RGB Universal Transmitter Wallplate (EU) (**FG1402-51-EW/EB/EA**) • UPX-CN+A-US Component Universal Transmitter Wallplate (US) (**FG1402-52-SW/SB/SA**) • UPX-CN+A-UK Component Universal Transmitter Wallplate (UK) (**FG1402-52-KW/KB/KA**) • UPX-CN+A-EU Component Universal Transmitter Wallplate (EU) (**FG1402-52-EW/EB/EA**) • UPX-CS+A-DE-B/W Composite Universal Transmitter Wallplate (Decor Style) (**FG1402-50-DW**) • UPX-RGB+A-DE-B/W RGB Universal Transmitter Wallplate (Decor Style) (**FG1402-51-DW**) • UPX-CN+A-DE-B/W Component Universal Transmitter Wallplate (Decor Style) (**FG1402-52-DW**) • UPX-HDMI+A-US-W/B/AL HDMI Pass-through Universal Transmitter Wallplate (US) (**FG1402-53-SW/SB/SA**) • UPX-HDMI+A-DE-W/B HDMI Pass-through Universal Transmitter Wallplate (Decor Style) (**FG1402-53-DW/DB**)

Mounting the DVX-2100HD into an Equipment Rack

The DVX-2100HD occupies two rack units in a standard equipment rack. The following steps apply to mounting the DVX-2100HD.

1. Discharge any static electricity from your body by touching a grounded metal object.
2. Position and install the mounting brackets, as shown in FIG. 2, using the supplied mounting screws.

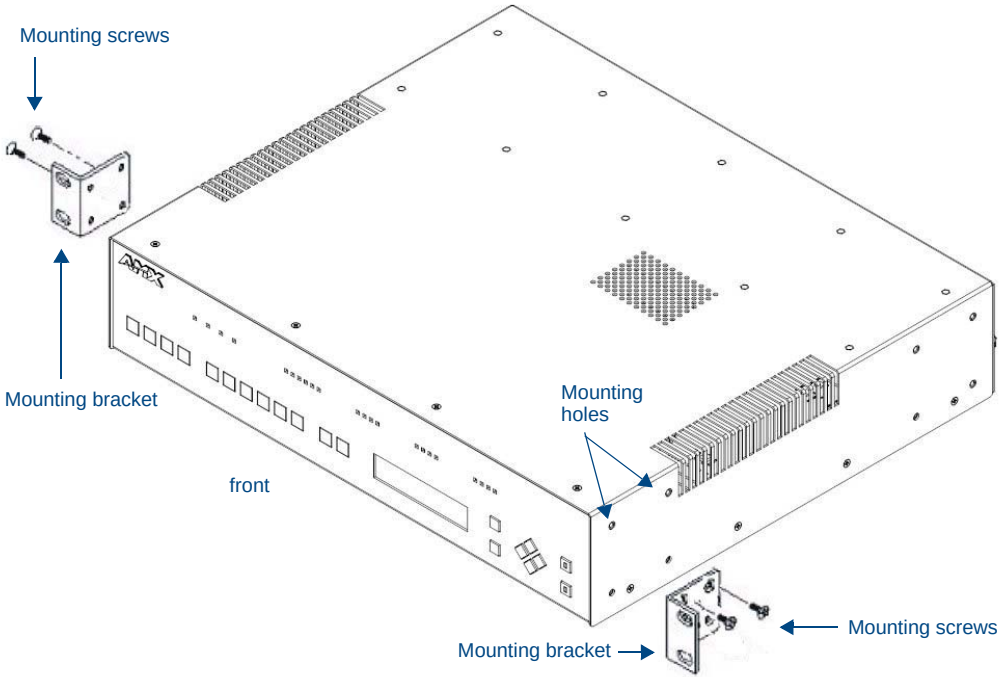


FIG. 2 Rack mounting the DVX-2100HD

3. Install the DVX-2100HD in the mounting rack by using the mounting screws to affix the unit to the rack.
4. Connect any applicable wires to the DVX-2100HD. Refer to the *Wiring and Device Connections* section on page 9 for wiring diagrams and pinout descriptions.

   Connect the unit only to a properly-rated supply circuit.

WARNING

DO NOT stand other units directly on top of the DVX-2100HD when it is rack mounted, as this will place excessive strain on the mounting brackets.

Ventilation

ALWAYS ensure that the rack enclosure is adequately ventilated.

The maximum operating ambient temperature is 40°C (104°F).

Sufficient airflow must be achieved (by convection or forced-air cooling) to satisfy the ventilation requirements of all the items of equipment installed within the rack.

When installing equipment into a rack, distribute the units evenly. Otherwise, hazardous conditions may be created by an uneven weight distribution. Reliable earthing (grounding) of rack-mounted equipment should be maintained.

It is recommended that you leave 1 RU of space above the DVX-2100HD when you install it in a rack.

Wiring and Device Connections

Overview

FIG. 3 displays the front panel of the DVX-2100HD-SP:

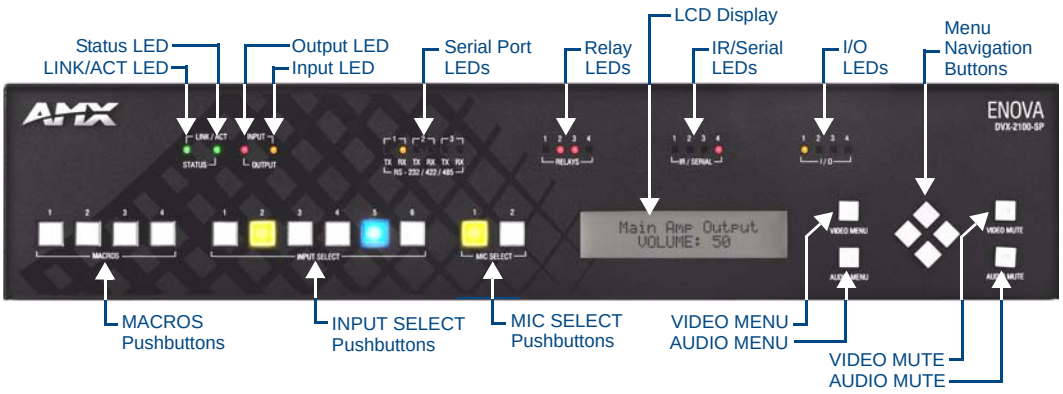


FIG. 3 DVX-2100HD-SP front panel

FIG. 4 displays the rear panel of the DVX-2100HD-SP with 2 DVI-I outputs and 2x25W Amp (FG1905-04).

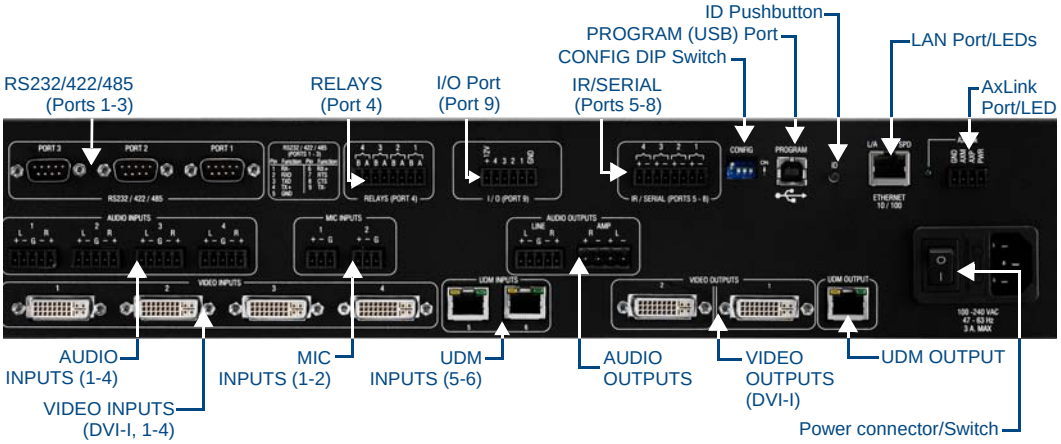


FIG. 4 DVX-2100HD-SP rear panel (FG1905-04)

The dual DVI-I outputs are only available on FG1905-04 and -05.

FIG. 5 displays the rear panel of the DVX-2100HD-SP with 1 RGB Output / 1 DVI-I Output and 2x25W Amp (FG1905-01). The RGB output is only available on FG1905-01 and -02 models.

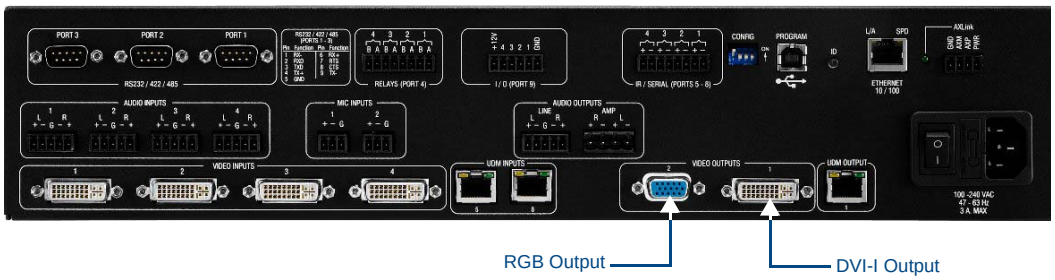


FIG. 5 DVX-2100SP rear panel (FG1905-01)

Front Panel Components

The following sub-sections describe each component on the front panel of the DVX-2100HD. Refer to FIG. 3 on page 9 for the component layout of the front panel.

LEDs

The LEDs on the front panel (FIG. 6) indicate the communications status of several different connections, as described in the table below:

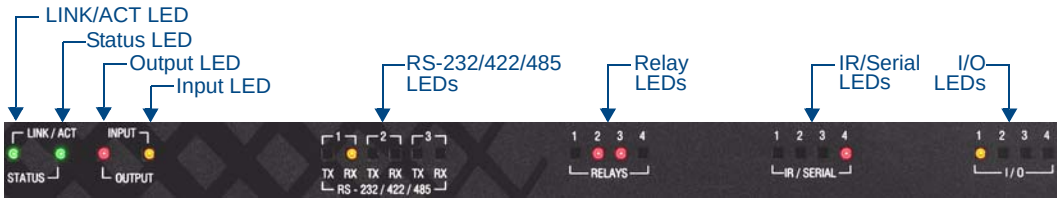


FIG. 6 Front Panel -LEDs

Front Panel LEDs		
Label	*Color*	*Description*
LINK/ACT	green	Blinks when receiving LAN data packets.
STATUS	green	Blinks to indicate that the system is programmed and communicating properly.
INPUT	yellow	Blinks to indicate that the Controller is receiving data.
OUTPUT	red	Blinks to indicate that the Controller is transmitting data.
RS-232/422/485 (1-3)	red/yellow	3 sets of LEDs indicate that RS-232/422/485 Ports (1-3) are transmitting or receiving data. • Yellow = receiving data • Red = transmitting data
RELAYS (1-4)	red	Lights to indicate that one or more of the relay channels (1-4) are currently active (closed).
IR/SERIAL (1-4)	red	Lights to indicate that one or more of the IR/Serial channels (1-4) are currently transmitting control data.
I/O (1-4)	yellow	Lights to indicate that one or more of the I/O channels (1-4) are currently active.

MACROS Pushbuttons

The four backlit MACROS pushbuttons (FIG. 7) allow you to select macro functions.

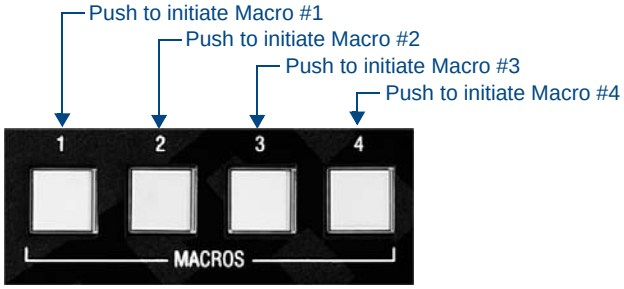


FIG. 7 MACROS pushbuttons

Macro functions are defined in NetLinx code. The on/off states and backlight color of the MACRO buttons are under control of the NetLinx program. You can define macros as any typical button event in NetLinx code, and assign the event to any of the four buttons on the DVX. Refer to the *NetLinx Studio Operation/Reference Guide* and the *NetLinx Programming Language Reference Guide* for information on programming macros.

INPUT SELECT Pushbuttons

The six backlit INPUT SELECT buttons (1-6) allow you to switch Video-only, Audio-only or Video+Audio (FIG. 8).

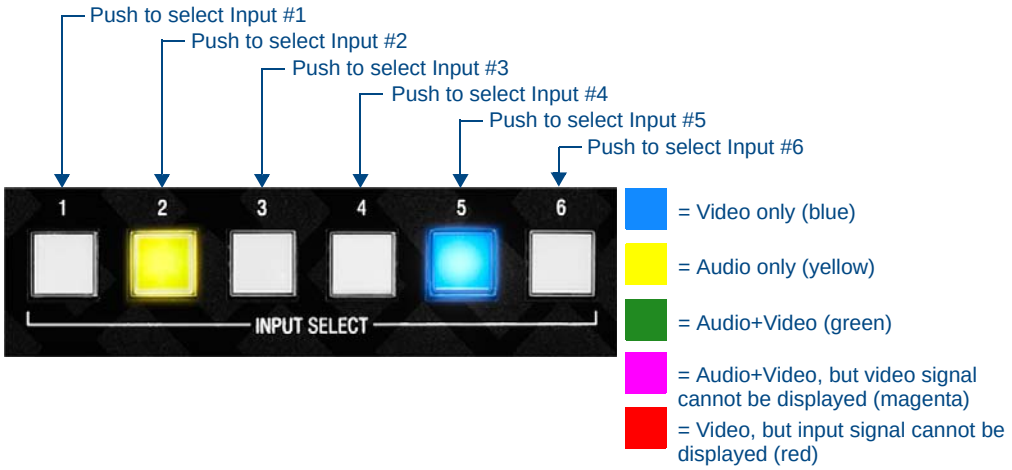


FIG. 8 INPUT SELECT pushbuttons

Each numbered INPUT SELECT button is associated with the corresponding numbered Input on the rear panel (refer to FIG. 4 on page 9):

Input Select Options	
INPUT SELECT Button	*Corresponding Input Connector*
Input 1	VIDEO INPUT 1 (DVI-I connector)
Input 2	VIDEO INPUT 2 (DVI-I connector)
Input 3	VIDEO INPUT 3 (DVI-I connector)
Input 4	VIDEO INPUT 4 (DVI-I connector)
Input 5	UDM INPUT 5 (RJ45 connector)
Input 6	UDM INPUT 6 (RJ45 connector)

These pushbuttons use multi color LEDs to indicate various states of input selection:

When you press an inactive input select button when not in a menu, the button lights *green* and activates the audio and video for the source input. Pressing an INPUT SELECT button after pressing the VIDEO MENU button activates only the video for the source input. Similarly, pressing the AUDIO MENU button followed by an INPUT SELECT button activates only the audio on the source input.

After making your selection, the selected input type (Audio, Video, or both) is switched to the selected output (see the *Video Settings* section on page 41 for details on selecting a video output), and the LED displays solid with the corresponding color:

- Blue = Video only
- Yellow = Audio only
- Green = Audio/Video
- Magenta = Audio/Video, but video signal cannot be displayed
- Red = Video only, but input signal cannot be displayed

MIC SELECT Pushbuttons

The two MIC SELECT (microphone select) pushbuttons (FIG. 9) allow you to toggle the associated microphone input (1 & 2) on and off.

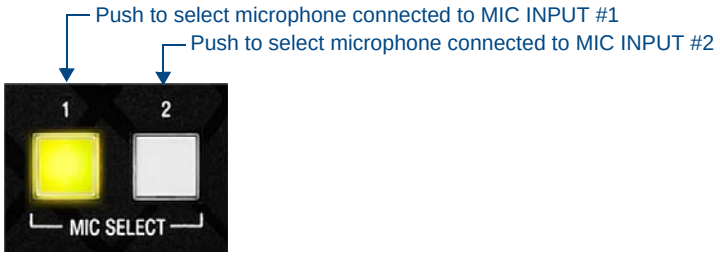


FIG. 9 Microphone Select buttons

The MIC SELECT button turns yellow to indicate that the selected microphone is active.

- When a microphone input is on, the audio from that microphone is mixed with the selected audio source.
- See the *Audio Settings* section on page 43 for information on setting mix values and adjusting the microphone levels from the front panel.
- See the *Audio Settings* section on page 53 for information on setting mix values and adjusting the microphone levels from the Web interface.

LCD Display

During normal operation, the 2 x 20 line LCD display (FIG. 10) indicates output volume information.

FIG. 10 LCD display

The LCD Display also displays VIDEO MENU, AUDIO MENU, and TOOLS MENU selections (see below), and indicates current status of any adjustments made to settings within these menus.

VIDEO MENU Pushbutton

Press the VIDEO MENU pushbutton (FIG. 11) to access the video options, displayed on the LCD display.

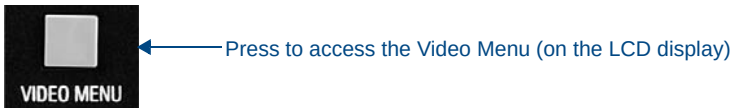


FIG. 11 Video Menu button

The Video menu enables you to set various options for the incoming video signal and its display output.

- Use the UP and DOWN navigational buttons to traverse the various options.
- Use the LEFT and RIGHT navigational buttons to adjust the selected video level or value.
- Use the Input Select buttons to select the video input to adjust.

Adjustments take effect immediately and are saved when you advance to another option or exit the menu. The menu exits automatically after no user interaction on the front panel for 20 seconds.

See the *Video Settings* section on page 41 for a listing of all available options and instructions on how to change the settings.

AUDIO MENU Pushbutton

Press the AUDIO MENU pushbutton (FIG. 12) to access the audio options, displayed on the LCD display.

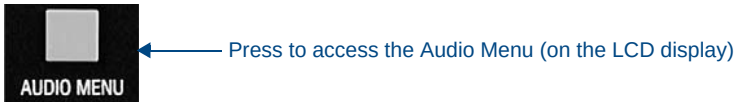


FIG. 12 Audio Menu button

The Audio menu enables you to set volume equalization settings for audio inputs and microphones.

- Use the UP and DOWN navigational buttons to traverse the various options.
- Use the LEFT and RIGHT navigational buttons to adjust the selected audio level or value.
- Use the Input Select buttons to choose the audio input to adjust.

Adjustments take effect immediately and are saved when you advance to another option or exit the menu. The menu exits automatically after no user interaction on the front panel for 20 seconds.

See the *Audio Settings* section on page 43 for a listing of all available options and instructions on how to change the settings.

TOOLS Menu Activation

Press both the VIDEO MENU pushbutton and the AUDIO MENU pushbuttons (FIG. 11 and FIG. 12) simultaneously to access the Tools options, displayed on the LCD display.

The Tools Menu enables you to see status information such as IP address and installed firmware versions as well as adjust LCD and LED backlight intensity.

- Use the UP and DOWN navigational buttons to traverse the various options.
- Use the LEFT and RIGHT navigational buttons to adjust the selected audio level or value.
- Use the Input Select buttons to choose the audio input to adjust.

Adjustments take effect immediately and are saved when you advance to another option or exit the menu. The menu exits automatically after no user interaction on the front panel for 20 seconds.

See the *Tools Menu* section on page 46 for a listing of all available options and instructions on how to change the settings.

Navigation Pushbuttons

The four directional navigation buttons (Left/Right/Up/Down) enable you to navigate through the menus on the LCD display.

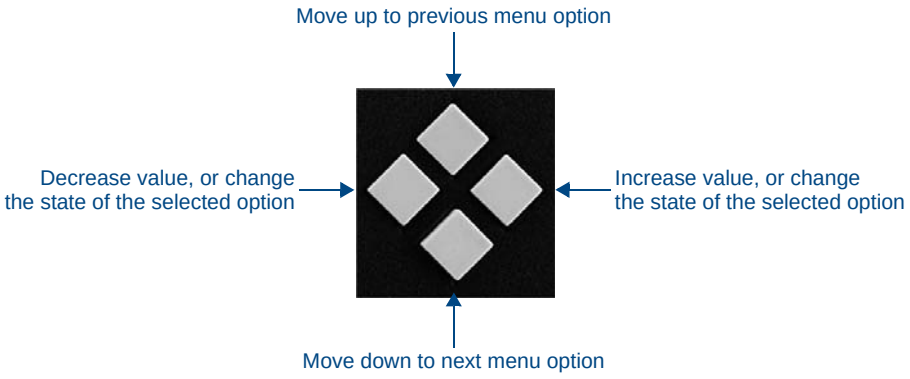

Move up to previous menu option
Decrease value, or change the state of the selected option
Increase value, or change the state of the selected option
Move down to next menu option

FIG. 13 Navigation buttons

The menu selection immediately defaults to selecting an input on the first screen.

VIDEO/AUDIO MUTE Pushbuttons

- Press the VIDEO MUTE button to enable or disable video on all output displays.
- Press the AUDIO MUTE button to enable or disable audio for all audio outputs.

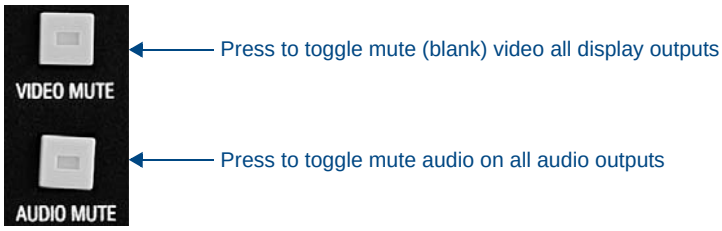

VIDEO MUTE
AUDIO MUTE
Press to toggle mute (blank) video all display outputs
Press to toggle mute audio on all audio outputs

FIG. 14 Audio/Video Mute buttons

The pushbuttons light (red) to indicate that Video and/or Audio muting is active.

Rear Panel Components

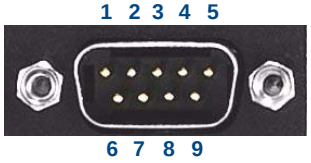
The following sub-sections describe each component on the rear panel of the DVX-2100HD. Refer to FIG. 4 on page 9 for the component layout of the rear panel.

RS-232/422/485 Serial Port Connectors (PORT 1, PORT 2, PORT 3)

The RS-232/422/485 serial device ports (FIG. 15) are used for A/V sources and displays. These ports support most standard RS-232 communication protocols for data transmission.

FIG. 15 RS-232/422/485 Device Port connectors

FIG. 16 provides wiring specifications for the RS-232/422/485 connectors.



DB9 Serial Port pinouts (male connector)

RS-232	RS-422	RS-485
Pin 2: RX signal	Pin 1: RX -	Pin 1: A (strap to 9)
Pin 3: TX signal	Pin 4: TX +	Pin 4: B (strap to 6)
Pin 5: GND	Pin 5: GND	Pin 5: GND
Pin 7: RTS	Pin 6: RX +	Pin 6: B (strap to 4)
Pin 8: CTS	Pin 9: TX -	Pin 9: A (strap to 1)

FIG. 16 RS-232/422/485 (DB9 - male) connector pinouts

RS-232/422/485 Port Wiring Specifications

Pin	*Signal*	*Function*	*RS-232*	*RS-422*	*RS-485*
1	RX-	Receive data		X	X (strap to pin 9)
2	RXD	Receive data	X		
3	TXD	Transmit data	X		
4	TX+	Transmit data		X	X (strap to pin 6)
5	GND	Signal ground	X	X	X
6	RX+	Receive data		X	X (strap to pin 4)
7	RTS	Request to send	X		
8	CTS	Clear to send	X		
9	TX-	Transmit data		X	X (strap to pin 1)

WARNING

When wiring the 422/485 connections, ***do not*** *use pre-made 9-wire cable or connect the wire in the cable to any connection that will not be used by the DB9 serial port.* ***Only use wiring that connects the needed pins.***

RELAYS (PORT 4)

You can connect up to four independent external relay devices to the Relay connectors on the device. Connectors labeled **A** are for *Common* and **B** are for *Output* (FIG. 17).

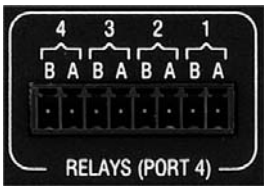


FIG. 17 RELAYS connectors

- Each relay is isolated and normally open.

I/O (PORT 9)

The I/O port (FIG. 18) responds to switch closures and voltage level (high/low) changes, or can be used for logic-level outputs.

FIG. 18 I/O connectors

- A contact closure between the GND and an I/O port is detected as a Push.
- When used for voltage inputs, the I/O port detects a low signal (0 - 1.5 VDC) as a Push, and a high signal (3.5 - 5 VDC) as a Release (*this I/O port uses 5V logic but can handle up to 12V without harm).*
- When used for outputs, the I/O port acts as a switch to GND and is rated for 200mA @ 12 VDC.
- The PWR pin provides +12 VDC @ 200 mA and is designed as a power output for the PCS Power Current Sensors, VSS2 Video Sync Sensors (or equivalent).
- The GND connector is a common ground and is shared by all I/O ports. A common ground is shared with I/O ports 1 - 3.

The following table provides wiring requirements for the I/O port:

I/O Port Wiring Specifications	
Signal	*Function*
+12 VDC:	PWR
4:	Input/Output
3:	Input/Output
2:	Input/Output
1:	Input/Output
GND:	Signal GND

IR/SERIAL (PORTS 5-8)

You can connect up to four IR- or Serial-controllable devices to the IR/SERIAL connectors (FIG. 19).

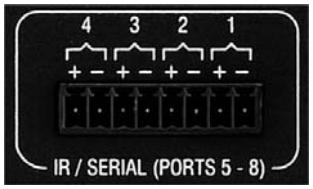


FIG. 19 IR/SERIAL connectors

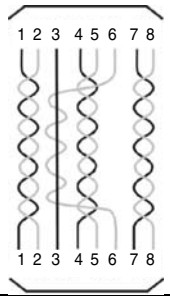
The IR/SERIAL connectors accept an IR Emitter (CC-NIRC) that mounts onto the device's IR window, or a mini-plug (CC-NSER) that connects to the device's control jack.

You can also connect a data (0 - 5 VDC) device.

The IR/Serial connector wiring specifications are listed in the following table.

IR/Serial Connector Wiring Specifications (per Port)

IR connections	*Port #*	*Signal*	*Function*
1	5	GND (-) Signal 1 (+)	Signal GND IR/Serial data
2	6	GND (-) Signal 2 (+)	Signal GND IR/Serial data
3	7	GND (-) Signal 3 (+)	Signal GND IR/Serial data
4	8	GND (-) Signal 4 (+)	Signal GND IR/Serial data



CONFIG DIP Switch

Use the Configuration DIP switch (FIG. 20) to set the on-board Master to *Program Run Disable* (**PRD**) mode.

Position 1 UP (ON) = PRD mode enabled
Position 1 DOWN (OFF) = Normal (default) mode - PRD mode disabled

Switch position 1 sets PRD mode (UP = ON)

FIG. 20 CONFIG DIP switch

PRD mode prevents the NetLinx program stored in the on-board Master from running during the device's power-up. This mode should only be used if the resident NetLinx program is causing inadvertent communication and/or control problems.

If necessary, place the on-board Master in PRD mode and use the NetLinx Studio v 2.x program to resolve the communication and/or control problems with the resident NetLinx program. After doing so, download the corrected program, reset the configuration DIP switch to normal mode, recycle power, and try again.

To set the CONFIG DIP Switch:

1. Turn off the power switch on the rear of the unit.
2. Set the CONFIG DIP switch (refer to FIG. 20).
3. Turn on the power switch.

Think of the PRD Mode (On) equating to a PC's SAFE Mode setting. This mode allows a user to continue powering a unit, update the firmware, and download a new program while circumventing any problems with a currently downloaded program. Power must be cycled to the unit after activating/deactivating this mode on the Configuration Port DIP switch #1.

PROGRAM Port (Type-B USB)

The PROGRAM port is a Type-B USB connector that connects the DVX-2100HD to a USB port on a PC, and is intended primarily to be used to configure system settings (FIG. 21).

FIG. 21 PROGRAM port

Be sure that your PC's COM port and terminal program's communication settings match those in the table below:

PC COM Port Communication Settings	
Baud	115200
Parity	None
Data Bits	8
Stop Bits	1
Flow Control	None

The PROGRAM Port is not recommended for firmware updates or large file transfers. These more data-intensive operations are better handled via LAN.

Preparing the DVX-2100HD for Serial Communication

1. Before using the USB port on the DVX-2100HD you must install the appropriate FTDI driver. A link to this driver can be found on the Product web page at www.amx.com.
2. Connect your PC's USB port to the USB Configuration Port on the DVX-21010HD. Either allow Windows to install the driver automatically (internet connection required), or point the installer to the location where you have previously saved the driver. This will create a new virtual COM port on your PC.
3. Edit the Serial Communication settings in NetLinx Studio to use the virtual COM port created in step 2, and set the communication parameters to 115.2K baud, N, 8, 1.

ID Pushbutton

The ID pushbutton (FIG. 22) sets the NetLinx ID assignments of the Internal Control Device. It has no effect on the Internal Switcher Device.

FIG. 22 ID Pushbutton

LAN (RJ-45)

The LAN RJ-45 port provides 10/100 Mbps communication via Cat5/5e/6 network cable.

FIG. 23 LAN port

The LAN port automatically negotiates the connection speed (10 Mbps or 100 Mbps), and whether to use half duplex or full duplex mode. This communication is reflected via the front ICSP LED.

FIG. 24 provides the pinouts and signals for the LAN connector and cable.

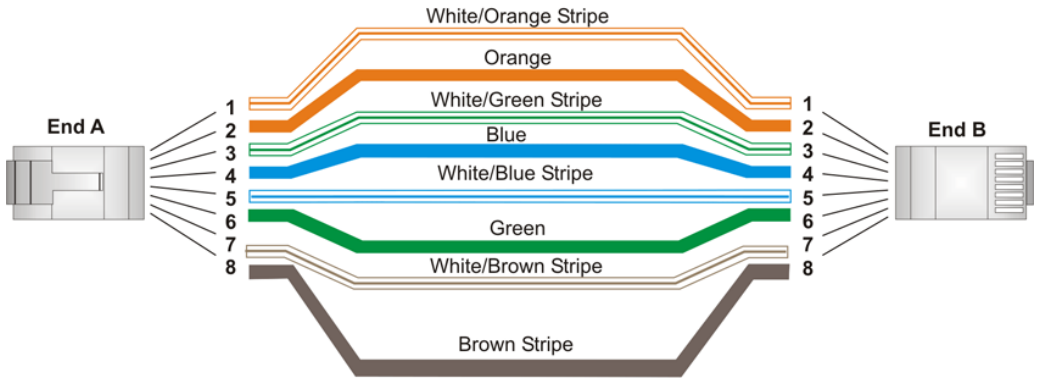


FIG. 24 RJ-45 wiring diagram

FIG. 25 describes the blink activity for the LAN connector and cable.

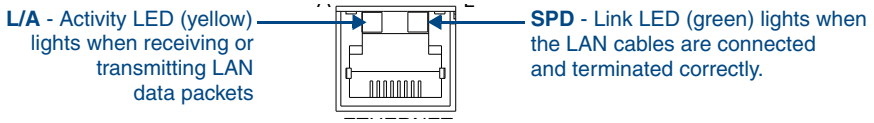

L/A - Activity LED (yellow) lights when receiving or transmitting LAN data packets
SPD - Link LED (green) lights when the LAN cables are connected and terminated correctly.

FIG. 25 LAN connector / LEDs

AxLink Port and LED (4-pin captive-wire)

The AxLink port (FIG. 26) allows the DVX-2100HD to support AMX AxLink devices.

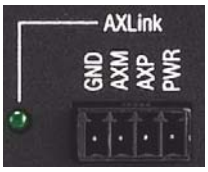


FIG. 26 AxLink Port and LED

The (green) AxLink LED indicates AxLink data activity:

- **Off** - No power, or the controller is not functioning properly.
- **1 blink per second** - Normal operation.
- **3 blinks per second** - AxLink bus error. Check all AxLink bus connections.

The AxLink port can be used to supply power to downstream AxLink-compatible devices as long as the maximum current draw is *less than* 2 Amps. To isolate the DVX-2100HD from high inrush current, AxLink devices, or potential power faults on the AxLink bus, it is strongly recommended that you power external AxLink devices from an independent power supply.

Refer to the following table for the wiring length information used with the DVX-2100HD:

Wiring Guidelines	
Wire size	*Maximum wiring length*
18 AWG	154.83 feet (47.19 meters)
20 AWG	98.30 feet (29.96 meters)
22 AWG	63.40 feet (19.32 meters)
24 AWG	38.68 feet (11.79 meters)

FIG. 27 provide wiring requirements for the AxLink connector:

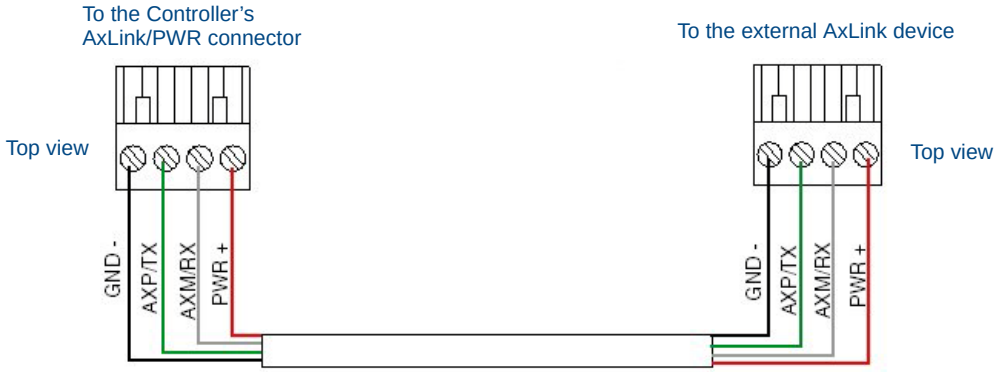


FIG. 27 Mini-Phoenix connector wiring diagram (direct data and power)

To use the 4-pin 3.5 mm mini-Phoenix (female) captive-wire connector for data communication and power transfer, the incoming PWR and GND cable from the 12 VDC-compliant power supply must be connected to the AxLink cable connector going to the presentation switcher. FIG. 28 shows the wiring diagram. Always use a local power supply to power the presentation switcher.

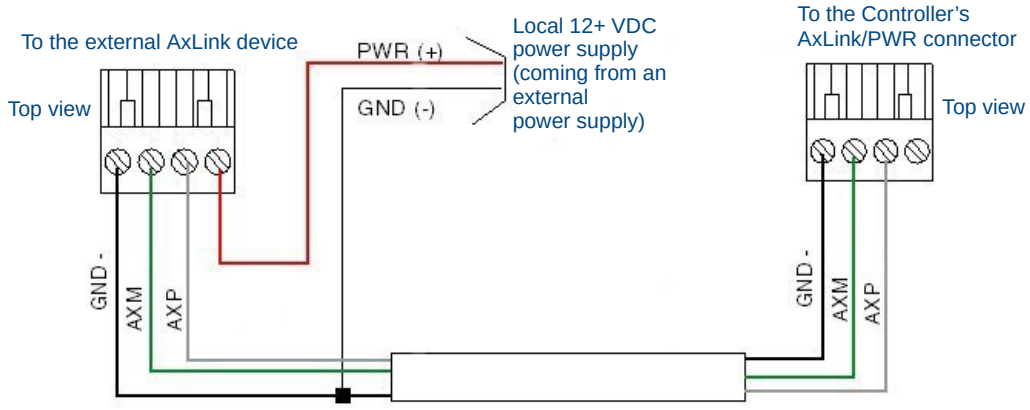


FIG. 28 4-pin mini-Phoenix connector wiring diagram (using external power source)

WARNING

*When you connect an external power supply, do not connect the wire from the PWR terminal (coming from the external device) to the PWR terminal on the Phoenix connector attached to the Controller unit. Make sure to connect **only** the AXM, AXP, and GND wires to the Controller's Phoenix connector when using an external power supply.*

Make sure to connect only the GND wire on the AxLink/PWR connector when using a separate 12 VDC power supply. Do not connect the PWR wire to the AxLink connector's PWR (+) opening.

AUDIO INPUTS (1-4)

The four AUDIO INPUTS connectors are 3.5 mm 5-position captive-wire terminals that can be wired for either balanced (differential) or unbalanced (single-ended) stereo audio (FIG. 29). The four AUDIO INPUT connectors (1-4) do not correspond to the four DVI-I VIDEO INPUT connectors (1-4), however, the DVX-2100HD allows independent switching of video and audio so video and audio inputs of the same number do not have to be connected to the same source equipment.

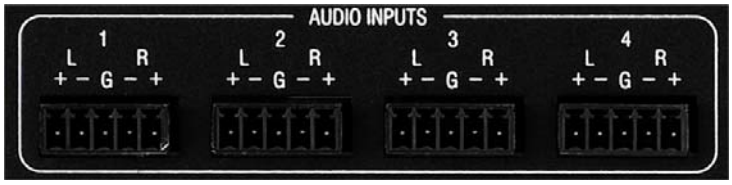


FIG. 29 AUDIO INPUTS connectors

Source devices require either balanced (differential) or unbalanced (single-ended) connections. FIG. 30 illustrates options for wiring between sources and input connectors and between output connectors and the destinations. More than one option can be used in the same system.

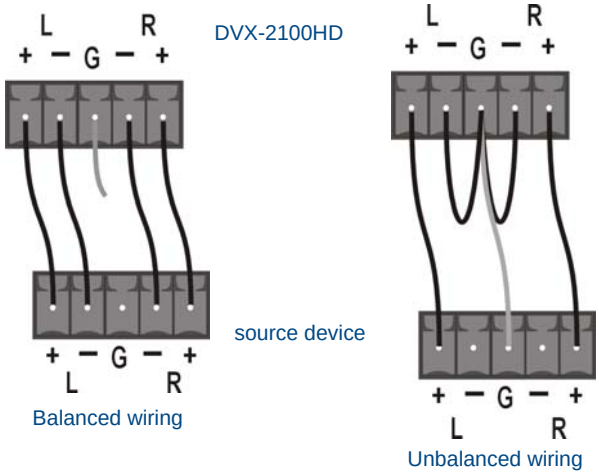


FIG. 30 Stereo 5-terminal wiring

FIG. 31 provides details for wiring from an audio input to a non-5 terminal audio source or destination, such as an RCA connector. Positive and ground wires connect to the source or destination connector. You also can use a CC-3.5ST5-RCA2F 2 RCA Female to 5-Pin Phoenix Cable (**FG10-003-20**) for this type of connection.

WARNING

Do not connect the negative terminals to the source connector. Doing so can cause damage to your device.

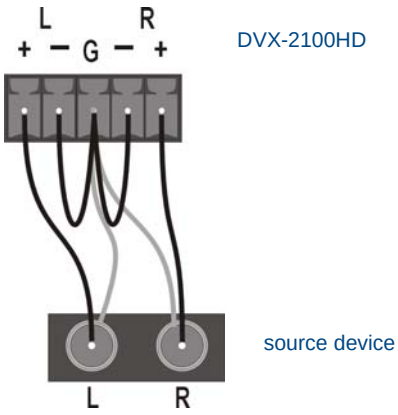


FIG. 31 RCA Stereo audio source wiring

MIC INPUTS (1-2)

Two 3.5mm 3-pin captive-wire MIC INPUT connectors (FIG. 32) allow up to two mono microphones to be connected to the DVX-2100HD.

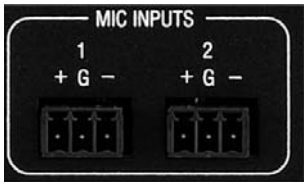


FIG. 32 MIC INPUTS

FIG. 33 illustrates wiring connections between the DVX-2100HD and a mono RCA output and an XLR output.

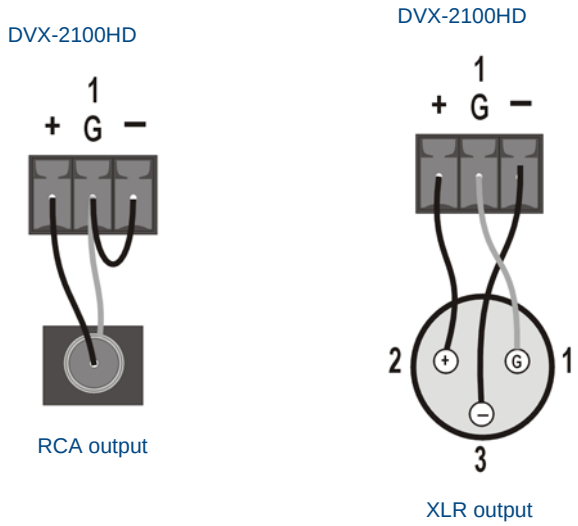


FIG. 33 RCA (mono) and XLR output wiring

AUDIO OUTPUT: LINE (Line Level audio)

The Line Level audio output provides fixed or variable, balanced or unbalanced, mono or stereo output.

FIG. 34 Line Level Audio output

Destination devices require either balanced (differential) or unbalanced (single-ended) connections. FIG. 35 illustrates options for wiring between output connectors and the destinations.

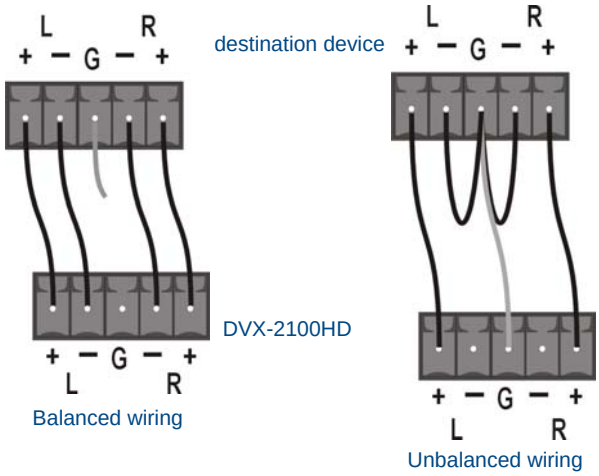


FIG. 35 Stereo 5-terminal wiring

AUDIO OUTPUT: AMP (Amplified audio)

The AMP (amplified) audio output (FIG. 36) provides amplified, variable, mono or stereo audio output.

DVX-2100HD-SP DVX-2100HD-T

FIG. 36 Amplified Audio Output

On the DVX-2100HD-SP, connect speakers to the AMP output as displayed in FIG. 37.

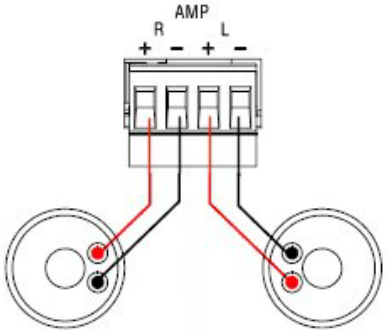


FIG. 37 Connecting speakers to the Amplified Audio output (DVX-2100HD-SP)

On the DVX-2100HD-T, connect a speaker to either the 70V or 100V terminals as displayed in FIG. 38.

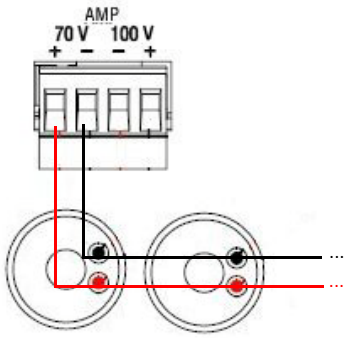


FIG. 38 Connecting speakers to the Amplified Audio output (DVX-2100HD-T)

NOTE

Connect a speaker to either the 70V or 100V terminals, but not both simultaneously.

VIDEO INPUTS (1-4)

The four DVI-I VIDEO INPUT connectors on the rear panel are used to connect source input devices to the DVX-2100HD (FIG. 39). The DVX-2100HD routes video from connected source input devices to the connected output devices. The four DVI-I VIDEO INPUT connectors correspond to source select button 1-4 on the front panel.

FIG. 39 VIDEO INPUT (DVI-I connectors)

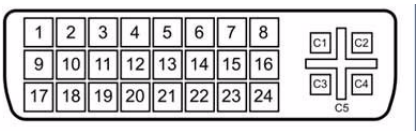
These numbered inputs correspond to the numbered INPUT SELECT pushbuttons on the front panel.

NOTE

The DVI Input connectors on the DVX-2100HD are DVI-I (integrated digital/analog) connectors. These connectors support both DVI-A (analog) and DVI-D (digital) inputs.

The following table describes the pinout configuration of the DVI-I VIDEO INPUT connectors:

DVI-I Input Ports - Pinouts and Signals					
Pin	*Signal*	*Pin*	*Signal*	*Pin*	*Signal*
1	TMDS Data2-	9	TMDS Data1-	17	TMDS Data0-
2	TMDS Data2+	10	TMDS Data1+	18	TMDSData0+
3	TMDS Data2/4 Shield	11	TMDS Data1/3 Shield	19	TMDS Data0/5 Shield
4	n/c	12	n/c	20	n/c
5	n/c	13	n/c	21	n/c
6	DDC Clock [SCL]	14	+5 V Power	22	TMDS Clock Shield
7	DDC Data [SDA]	15	Ground (for +5 V)	23	TMDS Clock +
8	Analog vertical sync	16	Hot Plug Detect	24	TMDS Clock -
C1	Analog Red				
C2	Analog Green				
C3	Analog Blue				
C4	Analog Horizontal Sync				
C5	Analog Ground				



NOTE

If a DVI source is attached before setting the input to DVI, you may need to reboot the source for it to recognize the DVI input description information required by the DVI standard.

Each VIDEO INPUT connector supports DVI-D, as well as RGBHV, S-video, Composite, and Component inputs, using the appropriate conversion cables. Refer to the *Cable Details and Pinout Information* section on page 33 for cable details and pinout information for each cable type:

- *DVI-D Male to DVI-D Male Single-Link Cable* section on page 33
- *DVI-A Male to 5-BNC Male Cable* section on page 35
- *DVI-A Male to Triple RCA Male Cable* section on page 36
- *DVI-A Male to S-Video Male Cable* section on page 38
- *DVI-A Male to HD15 (VGA) Male Adapter* section on page 39

The DVX-2100HD and the adapter cables listed above utilize industry-standard pinouts. The only adapter cable that is unique to AMX is the CC-DVI-SVID (DVI-to-S-Video) cable. The others are generally available to purchase from other vendors, assuming that they also utilize industry standard (or equivalent) pinouts.

The following table displays the supported video settings for each type of connection:

Supported Video Settings						
Type	*Phase*	*Shift*	*Hue*	*Saturation*	*Contrast*	*Brightness*
S-Video	X	X	✓	✓	✓	✓
Composite	X	X	✓	✓	✓	✓
Component	X	X	✓	X	✓	✓
RGB	✓	✓	X	X	✓	✓
DVI	X	X	X	X	✓	✓

UDM INPUTS (5-6)

The UDM INPUT ports 5-6 (FIG. 40) connect to the output ports of UDM Multi-Format Distribution Hubs or UPX Universal Transmitter Wallplates.

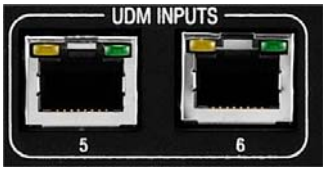


FIG. 40 UDM INPUTS connectors

The DVX-2100HD is compatible with all UDM Multi-Format Distribution Hubs and UPX Universal Transmitter Wallplates. Each input is capable of providing power to a UPX Universal Transmitter Wallplate. Plugging a UDM hub into one of the UDM inputs automatically disables power output on the UDM inputs.

Product Documentation for UDM Multi-Format Distribution Hubs is available to view or download from www.amx.com.

These are RJ-45 connectors, and the DVX-2100HD can be connected to the UDM Hub or UPX wallplate via CAT5 or CAT5e cabling (FIG. 41).

No skew compensation is necessary on UDM inputs as the inputs are designed to be used with 50 meters or less of cable.

Levels 8 and 9 control the brightness (gain) and sharpness (compensation) of the UDM input hardware.

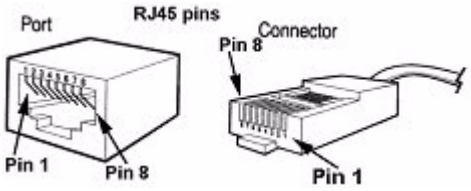


FIG. 41 RJ-45 Pinouts

The following table lists the pinouts for the UDM ports:

UDM Port Pinouts

RJ45 Pin #	568A Termination		A/V Signals				568B Termination	
	Color	Pair #	RGB	YPbPr	CVBS	S-Video	Color	Pair #
1		3	Red +	Y +	CVBS S1 +	Y +		2
2		3	Red -	Y -	CVBS S1 -	Y -		2
3		2	Blue +	Pr +	CVBS S3 +	C +		3
4		1	Green +	Pb +	CVBS S2 +			1
5		1	Green -	Pb -	CVBS S2 -			1
6		2	Blue -	Pr -	CVBS S3 -	C -		3
7		4	Audio, Data, Power +	Audio, Data, Power +	Audio, Data, Power +	Audio, Data, Power +		4
8		4	Audio, Data, Power -	Audio, Data, Power -	Audio, Data, Power -	Audio, Data, Power -		4

An incorrectly terminated cable will result in the following scenarios:

Incorrectly Terminated Cable Results

Pair	*Composite Video*	*SVideo*	*Component Video*	*RGBHV Video*	*User Port LINK LED*
2	No Video 1	No Luma	No Y	No RED	LIT
3	No Video 3	No Chroma	No Pr	No BLUE	LIT
1	No Video 2	NONE	No Pb NONE	No GREEN NONE	LIT NONE
4					

The recommended maximum distance for cable runs on the UDM INPUT ports is 50m / 165’ for all resolutions and formats.

VIDEO OUTPUTS (1-2) and UDM OUTPUT

The three VIDEO OUTPUT ports allow connectivity to various types of display devices (FIG. 42).

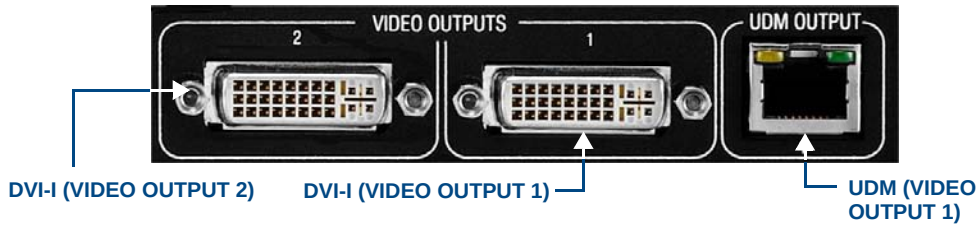


FIG. 42 VIDEO OUTPUTS

The pinouts and signals on the DVI-I VIDEO OUTPUT (1-2) connectors (FIG. 42) are identical to the DVI-I VIDEO INPUT connectors. You can view Digital and Analog output one at a time or at the same time by using a DVI-I to DVD-D/HD15 splitter. See the *VIDEO INPUTS (1-4)* section on page 25 for DVI-I connector pinout details.

DVI-I VIDEO OUTPUT 2 is available on **FG1905-04** and **FG1905-05** units. **FG1905-01** and **FG1905-02** units have an HD-15 video output in place of the second DVI-I output (see below).

NOTE

The UDM output mirrors Video Output 1, meaning they will always display the same video source at the same resolution and refresh rate. Video Output 2 is independent of Video Output 1 and can display a different video source at a different resolution and refresh rate.

HD-15 VIDEO OUTPUT Connector (2)

The HD-15 VIDEO OUTPUT connector (2) provides an independent analog RGBHV video output. This video output is only available on **FG1905-01** and **FG1905-02** units. On these units, the HD-15 video output replaces DVI-I VIDEO OUTPUT 2.

FIG. 43 VGA Output Connector

The following table lists the HD-15 VIDEO OUTPUT connector pinouts.

HD-15 VIDEO OUTPUT Connector Pinouts			
Pin	*Signal*	*Function*	
1	Red	Red signals	
2	Green	Green signals	
3	Blue	Blue signals	
4	N/C	Monitor ID bit 2	
5	GND	Signal Ground	
6	RAGND	Red analog ground	
7	GAGND	Green analog ground	
8	BAGND	Blue analog ground	
9	+5VDC	n/c	
10	SAGND	Synchronization analog ground	
11	N/A	Monitor ID bit 0	
12	DDC_SDA	Monitor ID bit 1	
13	HSYNC	Horizontal synchronization signal	
14	VSYNC	Vertical synchronization signal	
15	DDC_SDL	Monitor ID bit 3	

UDM OUTPUT

The UDM OUTPUT port (FIG. 44) connects to the input port of an UDM Multi-Format Receiver, allowing the DVX-2100HD to serve as a UDM Distribution Hub.

FIG. 44 UDM OUTPUT connector

Compatible UDM Multi-Format Distribution Receivers include:

- UDM-RX02 (FGUDM-RX02)
- UDM-RX02N (FG1402-20)

NOTE

Serial and IR control is only possible from the DVX-2100HD when using a UDM-RX02N receiver.

See the table in the *UDM INPUTS (5-6)* section on page 26 for a description of the pinout configuration of the UDM OUTPUT port.

WARNING

Using a DVX video output signal of 1080p or greater to a UDM-RX02N receiver may result in a shifted image and other video artifacts.

Audio & Video Formats/Resolutions/Distance

The following table provides recommended maximum distances for cable runs, based on video class type at various resolutions. These distances are only for the UDM OUTPUT port.

Audio & Video Formats/Resolutions/Distance			
Class	Format	Name	UDM
Composite/S-Video	720 x 480	NTSC	50 m / 165’
	720 x 576	PAL	50 m / 165’
Component	720 x 480	480p	50 m / 165’
	720 x 576	576p	50 m / 165’
	1280 x 720	720p	50 m / 165’
	1920 x 1080	1080i	50 m / 165’
	1920 x 1080	1080p	50 m / 165’
RGBHV	640 x 480	VGA	50 m / 165’ *
	800 x 600	SVGA	50 m / 165’ *
	1024 x 768	XGA	50 m / 165’ *
	1280 x 1024	SXGA	50 m / 165’ *
	1600 x 1200	UXGA	50 m / 165’
	1920 x 1080	HD	50 m / 165’
	* When using VGA modes **with audio enabled**, the maximum cable distance is approximately 50 m / 165’ (UDM-RX02N).		

It is important to note that the maximum distances indicated above are not absolute, but are recommended distances that have been tested to deliver video at the specified resolutions, without significant signal degradation. In particular, lower resolutions (640 x 480, 720 x 480 and 800 x 600) can often be delivered significantly further than what is indicated in the table.

Several factors affect the overall quality of the displayed video, including the quality of the twisted pair cable and connectors used, the nature of the video image itself, as well as the particulars of the installation and how the video is displayed and viewed.

NOTE

A major factor that can affect the quality of signal transmission is cable distance. Long distance cable runs (in excess of 50 meters/165 feet) are subject to resistance and capacitance losses which can negatively impact the quality of the image.

NOTE

When using a UPX-HDMI+A wallplate with the UDM OUTPUT port, note that the UPX-HDMI+A wallplates do not send video over the Cat5 cable. The Cat5 cable connected to these wall plates only carries power, audio, and button push status. Video is delivered to the display over a separate HDMI cable connected to the back of the wallplate. See the UPX-HDMI+A Pass-through Universal Transmitter Wallplate Installation Guide for more information.

Power Connector/Switch/Fuse

FIG. 45 displays the power switch and connector for the DVX-2100HD.

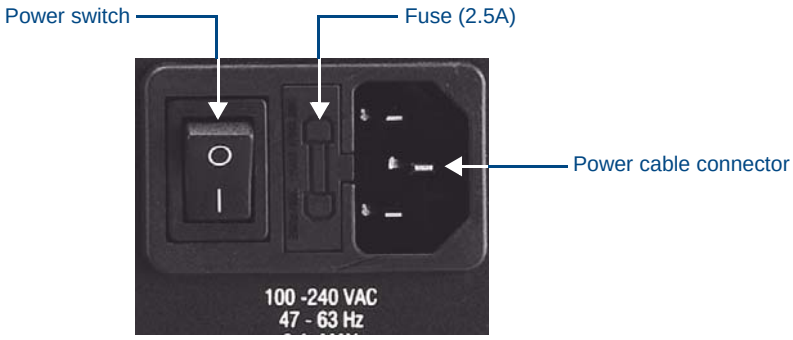


FIG. 45 Power Connector/Switch/Fuse

WARNING

This unit should only have one source of incoming power.
Using more than one source of power to the Controller can result in damage to the internal components and a possible burn out.
Apply power to the unit only after installation is complete.

Example Configuration

The DVX-2100HD is capable of controlling a multitude of combinations of audio and video devices. A typical configuration may consist of the following components:

- Equipment is installed in a rack located in or near the room. This rack may include the DVX-2100HD, a PC, two entertainment sources like DVD player or Satellite receiver, and possibly an audio/video teleconferencing system.
- The PC's DVI Video is connected directly to one source input on the DVX-2100HD and its audio to the corresponding audio input. Composite Video, S-Video, or Component Video from the DVD player, Satellite receiver, and video conference system are connected to three additional source inputs on the DVX-2100HD through the use of the appropriate conversion cables. Again, audio from these sources is connected to the corresponding audio inputs.
- Connections for audio and video from two Laptop PCs are routed to a UDM-0102 or a pair of UPX wallplates, and the CAT5 outputs on the UDM-0102 or wallplates are connected to the UDM inputs of the DVX-2100HD.
- One RGB output with an RGB adapter cable is routed to an AMX touch panel through an Audio/Video breakout box. One DVI or RGB output drives a local PC monitor near the rack or a projector. Alternately, the UDM output can be run to the projector and connected to an appropriate UDM receiver module like the UDM-RX02N.
- Both video outputs can independently show any video input at any of the supported resolutions.
- Audio/video sources and displays are connected to and controlled by the DVX-2100HD's RS-232 or IR ports. I/O ports are used for sensor inputs including proximity, occupancy, light, and power sensors. Relays are used for any relay-controlled devices like lighting, HVAC, or blinds.

FIG. 46 displays a sample configuration using the DVX-2100HD:

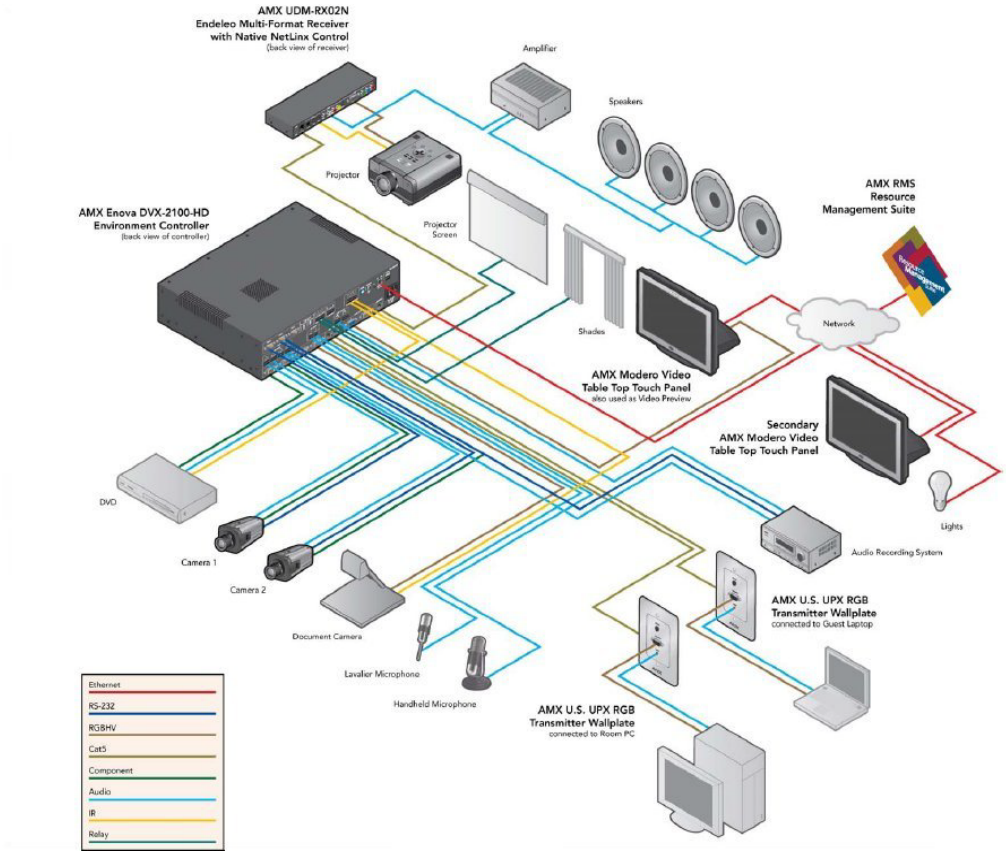


FIG. 46 Sample Configuration

Cable Details and Pinout Information

Overview

The DVI-I Input connectors on the rear panel are used to connect source input devices to the DVX-2100HD (FIG. 47). The DVX-2100HD routes video from connected source input devices to the connected output device. Each connector supports DVI as well as RGBHV, S-Video, Composite, and Component inputs.

FIG. 47 DVI Inputs

To connect non-DVI input source devices (S-Video, Composite, RGBHV, and Component) to the DVI Input connectors, the following (optional) adapter cables are required:

DVI Input Adapter Cables			
Name	*Description*	*Length*	*FG#*
• **CC-DVI-5BNCM**	DVI-to-5 BNC Male ***Note**: Used for RGBHV, Component, or Composite inputs. When used for composite inputs, connect the green plug on the adapter cable to the composite video output jack on the source device.*	6' (1.828m)	FG10-2170-08
• **CC-DVI-RCA3M**	DVI-to-3 RCA Male ***Note**: Used for Component or Composite inputs. When used for composite inputs, connect the green plug on the adapter cable to the composite video output jack on the source device.*	6' (1.828m)	FG10-2170-09
• **CC-DVI-SVID**	DVI-to-S-Video	9' (2.743m)	FG10-2170-10
• **CC-DVIM-VGAF**	DVI-to-VGA (up to 1920x1200)	6' (1.828m)	FG10-2170-13

DVI-D Male to DVI-D Male Single-Link Cable

Cable to be composed of the following:

- Four UL20276 (28AWG twisted pair + drain wire + aluminum foil/mylar shield) for TMDS signals and shields
- Five UL1589 (28AWG) for DDC_CLK, DDC_DATA, Hot_Plug_Detect, +5VDC, and GROUND
- The above bundles jacketed together in aluminum foil shield and 85% (minimum) braid
- EMI shield metal can on both DVI connectors and connected to braid

DVI-to-DVI Cable Pinout Information

DVI-to-DVI Cable Pinout Information				
DVI-D Connector Pin	**Signal Name**	**Signal Name**	**DVI-D Connector Pin**	**Notes:**
1	TMDS DATA 2 N	TMDS DATA 2 N	1	28AWG twisted pair 2
2	TMDS DATA 2 P	TMDS DATA 2 P	2	28AWG twisted pair 2
3	TMDS SHIELD 2/4	TMDS SHIELD 2/4	3	28AWG twisted pair 2 drain
4	TMDS DATA 4 N	TMDS DATA 4 N	4	Pin not populated in DVI-D connector
5	TMDS DATA 4 P	TMDS DATA 4 P	5	Pin not populated in DVI-D connector
6	DDC CLOCK	DDC CLOCK	6	28AWG
7	DDC DATA	DDC DATA	7	28AWG
8	ANALOG VERTICAL SYNC	ANALOG VERTICAL SYNC	8	Pin populated in DVI-D connector, but not connected for this cable
9	TMDS DATA 1 N	TMDS DATA 1 N	9	28AWG twisted pair 1
10	TMDS DATA 1 P	TMDS DATA 1 P	10	28AWG twisted pair 1
11	TMDS SHIELD 1/3	TMDS SHIELD 1/3	11	28AWG twisted pair 1 drain
12	TMDS DATA 3 N	TMDS DATA 3 N	12	Pin not populated in DVI-D connector
13	TMDS DATA 3 P	TMDS DATA 3 P	13	Pin not populated in DVI-D connector
14	+5VDC	+5VDC	14	28AWG
15	GROUND	GROUND	15	28AWG
16	HOT PLUG DETECT	HOT PLUG DETECT	16	28AWG
17	TMDS DATA 0 N	TMDS DATA 0 N	17	28AWG twisted pair 0
18	TMDS DATA 0 P	TMDS DATA 0 P	18	28AWGtwisted pair 0
19	TMDS SHIELD 0/5	TMDS SHIELD 0/5	19	28AWGtwisted pair 0 drain
20	TMDS DATA 5 N	TMDS DATA 5 N	20	Pin not populated in DVI-D connector
21	TMDS DATA 5 P	TMDS DATA 5 P	21	Pin not populated in DVI-D connector
22	TMDS CLOCK SHIELD	TMDS CLOCK SHIELD	22	28AWG twisted pair CLK drain
23	TMDS CLOCK P	TMDS CLOCK P	23	28AWGtwisted pair CLK
24	TMDS CLOCK N	TMDS CLOCK N	24	28AWGtwisted pair CLK
C1	C1 ANALOG RED	C1 ANALOG RED	C1	Pin not populated in DVI-D connector
C2	C2 ANALOG GREEN	C2 ANALOG GREEN	C2	Pin not populated in DVI-D connector
C3	C3 ANALOG BLUE	C3 ANALOG BLUE	C3	Pin not populated in DVI-D connector
C4	C4 ANALOG HSYNC	C4 ANALOG HSYNC	C4	Pin not populated in DVI-D connector
C5	C5 ANALOG GROUND	C5 ANALOG GROUND	C5	Pin populated in DVI-D connector, but not connected for this cable
BACKSHELL	SHIELD	SHIELD	BACKSHELL	Outer braid

DVI-A Male to 5-BNC Male Cable

NOTE

*This cable type corresponds to the **CC-DVI-5BNCM** DVI-to-Component cable (**FG10-2170-08**), available from AMX.*

Cable to be composed of the following:

- Five 75ohm 28 AWG mini-coax cables for the Red, Green, Blue, VSync, and HSync signals and returns
- EMI shield metal can on DVI connector

DVI-to-5-BNC Cable Pinout Information

DVI-to-5-BNC Cable Pinout Information

DVI-A Connector Pin	Signal Name	Signal Name	BNC connector pin	Notes:
1	TMDS DATA 2 N			Pin populated in DVI-A connector, but not connected for this cable
2	TMDS DATA 2 P			Pin populated in DVI-A connector, but not connected for this cable
3	TMDS SHIELD 2/4			Pin not populated in DVI-A connector
4	TMDS DATA 4 N			Pin not populated in DVI-A connector
5	TMDS DATA 4 P			Pin not populated in DVI-A connector
6	DDC CLOCK			Pin populated in DVI-A connector, but not connected for this cable
7	DDC DATA			Pin populated in DVI-A connector, but not connected for this cable
8	ANALOG VERTICAL SYNC	VSync Signal	Black BNC center pin	
9	TMDS DATA 1 N			Pin not populated in DVI-A connector
10	TMDS DATA 1 P			Pin not populated in DVI-A connector
11	TMDS SHIELD 1/3			Pin not populated in DVI-A connector
12	TMDS DATA 3 N			Pin not populated in DVI-A connector
13	TMDS DATA 3 P			Pin not populated in DVI-A connector
14	+5VDC			Pin populated in DVI-A connector, but not connected for this cable
15	GROUND	VSync, HSync Returns (shields)	Black/Grey BNC shields	
16	HOT PLUG DETECT			Pin populated in DVI-A connector, but not connected for this cable
17	TMDS DATA 0 N			Pin populated in DVI-A connector, but not connected for this cable
18	TMDS DATA 0 P			Pin populated in DVI-A connector, but not connected for this cable
19	TMDS SHIELD 0/5			Pin not populated in DVI-A connector
20	TMDS DATA 5 N			Pin not populated in DVI-A connector
21	TMDS DATA 5 P			Pin not populated in DVI-A connector
22	TMDS CLOCK SHIELD			Pin not populated in DVI-A connector
23	TMDS CLOCK P			Pin populated in DVI-A connector, but not connected for this cable
24	TMDS CLOCK N			Pin populated in DVI-A connector, but not connected for this cable

DVI-to-5-BNC Cable Pinout Information (Cont.)				
DVI-A Connector Pin	**Signal Name**	**Signal Name**	**BNC connector pin**	**Notes:**
C1	C1 ANALOG RED	Red Signal	Red BNC center pin	
C2	C2 ANALOG GREEN	Green Signal	Green BNC center pin	
C3	C3 ANALOG BLUE	Blue Signal	Blue BNC center pin	
C4	C4 ANALOG HSYNC	HSync Signal	Grey BNC center pin	
C5	C5 ANALOG GROUND	Red, Green, Blue Returns (shields)	Red/Green/Blue BNC shields	
BACKSHELL	SHIELD			Pin populated in DVI-A connector, but not connected for this cable

DVI-A Male to Triple RCA Male Cable

*This cable type corresponds to the **CC-DVI-RCA3M** DVI-to-Component/Composite cable (**FG10-2170-09**), available from AMX.*

Cable to be composed of the following:

- Three 75ohm 28 AWG mini-coax cables for the Red, Green, and Blue signals and returns
- EMI shield metal can on DVI connector

DVI-to-Triple RCA Cable Pinout Information

DVI-to-Triple RCA Cable Pinout Information				
DVI-A Connector Pin	**Signal Name**	**Signal Name**	**RCA connector pin**	**Notes:**
1	TMDS DATA 2 N			Pin populated in DVI-A connector, but not connected for this cable
2	TMDS DATA 2 P			Pin populated in DVI-A connector, but not connected for this cable
3	TMDS SHIELD 2/4			Pin not populated in DVI-A connector
4	TMDS DATA 4 N			Pin not populated in DVI-A connector
5	TMDS DATA 4 P			Pin not populated in DVI-A connector
6	DDC CLOCK			Pin populated in DVI-A connector, but not connected for this cable
7	DDC DATA			Pin populated in DVI-A connector, but not connected for this cable
8	ANALOG VERTICAL SYNC			Pin populated in DVI-A connector, but not connected for this cable
9	TMDS DATA 1 N			Pin not populated in DVI-A connector
10	TMDS DATA 1 P			Pin not populated in DVI-A connector
11	TMDS SHIELD 1/3			Pin not populated in DVI-A connector
12	TMDS DATA 3 N			Pin not populated in DVI-A connector
13	TMDS DATA 3 P			Pin not populated in DVI-A connector

DVI-to-Triple RCA Cable Pinout Information (Cont.)				
DVI-A Connector Pin	**Signal Name**	**Signal Name**	**RCA connector pin**	**Notes:**
14	+5VDC			Pin populated in DVI-A connector, but not connected for this cable
15	GROUND			Pin populated in DVI-A connector, but not connected for this cable
16	HOT PLUG DETECT			Pin populated in DVI-A connector, but not connected for this cable
17	TMDS DATA 0 N			Pin populated in DVI-A connector, but not connected for this cable
18	TMDS DATA 0 P			Pin populated in DVI-A connector, but not connected for this cable
19	TMDS SHIELD 0/5			Pin not populated in DVI-A connector
20	TMDS DATA 5 N			Pin not populated in DVI-A connector
21	TMDS DATA 5 P			Pin not populated in DVI-A connector
22	TMDS CLOCK SHIELD			Pin not populated in DVI-A connector
23	TMDS CLOCK P			Pin populated in DVI-A connector, but not connected for this cable
24	TMDS CLOCK N			Pin populated in DVI-A connector, but not connected for this cable
C1	C1 ANALOG RED	Component Pr / CVBS 1 Signal	Red RCA connector center pin	
C2	C2 ANALOG GREEN	Component Y / CVBS 2 Signal	Green RCA connector center pin	
C3	C3 ANALOG BLUE	Component Pb / CVBS 3 Signal	Blue RCA connector center pin	
C4	C4 ANALOG HSYNC			Pin populated in DVI-A connector, but not connected for this cable
C5	C5 ANALOG GROUND	Pr, Y, Pb / CVBS Returns (shields)	Red/Green/Blue RCA connector shields	
BACKSHELL	SHIELD			Pin populated in DVI-A connector, but not connected for this cable

DVI-A Male to S-Video Male Cable

NOTE

*This cable corresponds to the **CC-DVI-SVID** DVI-to-S-Video adapter cable (**FG10-2170-10**), available from AMX.*

Cable to be composed of the following:

- Two 75ohm 28 AWG mini-coax cables for the Luminance (Y) and Chrominance (C) signals and returns
- EMI shield metal can on DVI connector

DVI-to-S-Video Cable Pinout Information

DVI-to-S-Video Cable Pinout Information				
DVI-A Connector Pin	**Signal Name**	**Signal Name**	**S-Video Connector Pin**	**Notes:**
1	TMDS DATA 2 N			Pin populated in DVI-A connector, but not connected for this cable
2	TMDS DATA 2 P			Pin populated in DVI-A connector, but not connected for this cable
3	TMDS SHIELD 2/4			Pin not populated in DVI-A connector
4	TMDS DATA 4 N			Pin not populated in DVI-A connector
5	TMDS DATA 4 P			Pin not populated in DVI-A connector
6	DDC CLOCK			Pin populated in DVI-A connector, but not connected for this cable
7	DDC DATA			Pin populated in DVI-A connector, but not connected for this cable
8	ANALOG VERTICAL SYNC			Pin populated in DVI-A connector, but not connected for this cable
9	TMDS DATA 1 N			Pin not populated in DVI-A connector
10	TMDS DATA 1 P			Pin not populated in DVI-A connector
11	TMDS SHIELD 1/3			Pin not populated in DVI-A connector
12	TMDS DATA 3 N			Pin not populated in DVI-A connector
13	TMDS DATA 3 P			Pin not populated in DVI-A connector
14	+5VDC			Pin populated in DVI-A connector, but not connected for this cable
15	GROUND			Pin populated in DVI-A connector, but not connected for this cable
16	HOT PLUG DETECT			Pin populated in DVI-A connector, but not connected for this cable
17	TMDS DATA 0 N			Pin populated in DVI-A connector, but not connected for this cable
18	TMDS DATA 0 P			Pin populated in DVI-A connector, but not connected for this cable
19	TMDS SHIELD 0/5			Pin not populated in DVI-A connector
20	TMDS DATA 5 N			Pin not populated in DVI-A connector
21	TMDS DATA 5 P			Pin not populated in DVI-A connector
22	TMDS CLOCK SHIELD			Pin not populated in DVI-A connector
23	TMDS CLOCK P			Pin populated in DVI-A connector, but not connected for this cable
24	TMDS CLOCK N			Pin populated in DVI-A connector, but not connected for this cable
C1	C1 ANALOG RED			Pin populated in DVI-A connector, but not connected for this cable

DVI-to-S-Video Cable Pinout Information (Cont.)				
DVI-A Connector Pin	**Signal Name**	**Signal Name**	**S-Video Connector Pin**	**Notes:**
C2	C2 ANALOG GREEN	Luminance (Y) Signal (center conductor)	3	
C3	C3 ANALOG BLUE	Chrominance (C) Signal (center conductor)	4	
C4	C4 ANALOG HSYNC			Pin populated in DVI-A connector, but not connected for this cable
C5	C5 ANALOG GROUND	Y, C Returns (shields)	1, 2	
BACKSHELL	SHIELD			Pin populated in DVI-A connector, but not connected for this cable

DVI-A Male to HD15 (VGA) Male Adapter

NOTE

*This cable type corresponds to the **CC-DVIM-VGAF** DVI-to-VGA adapter (**FG10-2170-13**), available from AMX.*

Cable to be composed of the following:

- Three 75ohm 28 AWG mini-coax cables for the Red, Green, and Blue signals and returns
- Seven UL1589 (28AWG) for VSYNC, HSYNC, DDC_CLK, DDC_DATA, Hot_Plug_Detect, +5VDC, and GROUND
- The above bundles jacketed together in aluminum foil shield and 85% (minimum) braid
- EMI shield metal can on both DVI and HD15 connectors and connected to braid

DVI-to-VGA Cable Pinout Information

DVI-to-VGA Cable Pinout Information				
DVI-A Connector Pin	**Signal Name**	**Signal Name**	**HD15 (VGA) Pin**	**Notes:**
1	TMDS DATA 2 N			Pin populated in DVI-A connector, but not connected for this cable
2	TMDS DATA 2 P			Pin populated in DVI-A connector, but not connected for this cable
3	TMDS SHIELD 2/4			Pin not populated in DVI-A connector
4	TMDS DATA 4 N			Pin not populated in DVI-A connector
5	TMDS DATA 4 P			Pin not populated in DVI-A connector
6	DDC CLOCK	DDC CLOCK	15	28AWG
7	DDC DATA	DDC DATA	12	28AWG
8	ANALOG VERTICAL SYNC	VSYNC Signal	14	28AWG
9	TMDS DATA 1 N			Pin not populated in DVI-A connector
10	TMDS DATA 1 P			Pin not populated in DVI-A connector
11	TMDS SHIELD 1/3			Pin not populated in DVI-A connector
12	TMDS DATA 3 N			Pin not populated in DVI-A connector
13	TMDS DATA 3 P			Pin not populated in DVI-A connector
14	+5VDC	+5VDC	9	28AWG
15	GROUND	GND, HS Return	5	28AWG
16	HOT PLUG DETECT	+5VDC	9	28AWG

DVI-to-VGA Cable Pinout Information (Cont.)				
DVI-A Connector Pin	**Signal Name**	**Signal Name**	**HD15 (VGA) Pin**	**Notes:**
17	TMDS DATA 0 N			Pin populated in DVI-A connector, but not connected for this cable
18	TMDS DATA 0 P			Pin populated in DVI-A connector, but not connected for this cable
19	TMDS SHIELD 0/5			Pin not populated in DVI-A connector
20	TMDS DATA 5 N			Pin not populated in DVI-A connector
21	TMDS DATA 5 P			Pin not populated in DVI-A connector
22	TMDS CLOCK SHIELD			Pin not populated in DVI-A connector
23	TMDS CLOCK P			Pin populated in DVI-A connector, but not connected for this cable
24	TMDS CLOCK N			Pin populated in DVI-A connector, but not connected for this cable
C1	C1 ANALOG RED	RED Coax Signal	1	Red mini-coax signal
C2	C2 ANALOG GREEN	GREEN Coax Signal	2	Green mini-coax signal
C3	C3 ANALOG BLUE	BLUE Coax Signal	3	Blue mini-coax signal
C4	C4 ANALOG HSYNC	HSYNC Signal	13	28AWG
C5	C5 ANALOG GROUND	RGB Coax, VSync/DDC Returns	6, 7, 8, 10, 11	Red, Green, Blue mini-coax returns; VSync/DDC return; NC used as GND
BACKSHELL	Braided Shield	Braided Shield	BACKSHELL	Outer braid, tied to 6, 7, 8, 10, 11

Audio/Video Configuration

You can access the configuration settings for the DVX-2100HD by using one of the following methods:

- Using the front panel buttons
- Using a Web browser

Using the Front Panel Buttons

You can access the configuration settings for the presentation switcher by using the VIDEO MENU and AUDIO MENU buttons on the front panel of the DVX-2100HD. Pressing either opens the respective Video or Audio options on the LCD display on the front panel. Pressing both buttons simultaneously opens the Tools options. FIG. 48 shows the LCD display.

FIG. 48 LCD display

Use the Navigational buttons to traverse the available options and change their values. FIG. 49 displays the navigational function of each button.

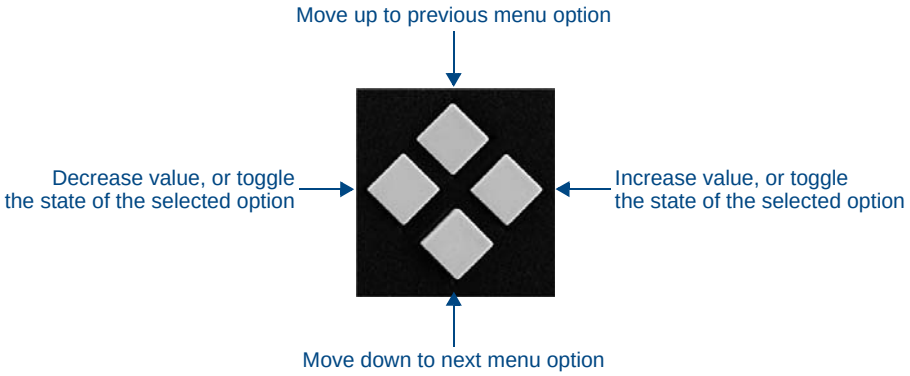

Move up to previous menu option
Decrease value, or toggle the state of the selected option
Increase value, or toggle the state of the selected option
Move down to next menu option

FIG. 49 Navigation buttons

Video Settings

The following table lists the options available by pressing the VIDEO MENU button.

Video Menu Options	
Output Select (ALL, 1, or 2)	Use the left and right navigational buttons to manually select which video output you want to use. You can choose from 1, 2, or ALL. This choice affects which output(s) are affected when the Input Select buttons are pressed and when adjusting the next three menu options.
Auto Adjust	Use the left and right navigational buttons to toggle whether you want the video output resolution to be set automatically. The default setting is ON.
Resolution	Use the left and right navigational buttons to manually select the correct resolution and refresh rate of the selected output. For a complete list of output resolutions, see the *DVI and VGA Supported Output Resolutions* section on page 97. The default setting is Auto.

Video Menu Options (Cont.)	
Aspect Ratio	Use the left and right navigation buttons to select how video inputs should be displayed when the input and output aspect ratio do not match. You can choose from the following options: FULL: Maintains the input aspect ratio while filling the screen either vertically or horizontally. Black bars may appear above and below or to e left and right of the image. STRETCH: Ignores the input aspect ratio and stretches the image to fill the screen in all directions. ZOOM: Maintains the input aspect ratio while zooming the image to fill the screen in all directions. Image data may be lost on the top and bottom or to the left and right of the displayed image. ANAMORPHIC: Use with anamorphic formatted video sources so that images appear correctly on the display. The default setting is FULL.
OSD Overlay	Use the left and right navigational buttons to toggle whether you want the OSD overlay to be turned on or off. You can choose from Enabled or Disabled. When enabled, the input name and resolution displays in a small box in the upper left-hand corner of the screen whenever you select a new input source. The default setting is Disabled.
Test Pattern	Use the left and right navigational buttons to choose an output test pattern. Select Off to disable the test pattern and view video from the selected source. You can choose from Off, Color Bar, Gray Ramp, SMPTE Bar, HiLoTrak, Pluge, and Cross Hatch.
Source (Input Video Adjust): ***Note**: The following input video adjustments have no effect on the display of the internally generated test patterns. Refer to the Supported Video Settings table on page 26 for details on which settings apply to each input format type.*	
Black & White	Use the left and right navigational buttons to toggle whether you want the video from the selected input to display in black and white. You can set the Black & White option to On or Off. The default setting is Off.
Brightness	Use the left and right navigational buttons to alter the brightness level adjustment applied to the selected input. You can set the brightness level from 0-100. The default setting is 50.
Contrast	Use the left and right navigational buttons to alter the contrast level adjustment applied to the selected input. You can set the contrast level from 0-100. The default setting is 50.
Saturation	Use the left and right navigational buttons to alter the saturation level adjustment applied to the selected input. You can set the saturation level from 0-100. The default setting is 50.
Hue	Use the left and right navigational buttons to alter the hue adjustment applied to the selected input. You can set the hue level from 0-100. The default setting is 50.
Auto	Use the left and right navigational buttons to choose to auto-detect the input resolution and refresh rate.
Resolution	Use the left and right navigational buttons to manually select the correct resolution and refresh rate of the selected input. For a complete list of input resolutions, see the *DVI and VGA Supported Input Resolutions* section on page 95 and the *Component Video Supported Input Resolutions* section on page 97. The default setting is Auto.
Type	Use the left and right navigational buttons to indicate the video format of the selected input. You can choose from DVI, VGA, Component, S-Video, and Composite. The default setting is Component.
Shift	Use the left and right navigational buttons to shift the location of the video input from left to right. You can set the shift from -127 to 127. The default setting is 0.
Phase	Use the left and right navigational buttons to alter the phase adjustment for the selected input. You can set the phase adjustment from 0-32. The default setting is 0.
Revert to Default	Use the left and right navigational buttons to indicate that you want to return all video options to their default settings.

Changing the Video Output Resolution

Perform these steps to change the video output resolution:

1. Press the **VIDEO MENU** button on the front panel of the DVX-2100HD.
2. Press the down navigation button until the Output Select option appears.
3. Press the left and right navigation buttons to select the output to change (ALL, 1 or 2).
4. Press the down navigational button until the Output Resolution/Refresh Rate option appears.
5. Use the left and right navigational buttons to locate the appropriate output resolution and refresh rate. You can also choose Auto to automatically detect the resolution and refresh rate.

Changing the Output Aspect Ratio

Perform these steps to change the output aspect ratio:

1. Press the **VIDEO MENU** button on the front panel of the DVX-2100HD.
2. Press the down navigation button until the Output Select option appears.
3. Press the left and right navigation buttons to select the output to change (ALL, 1 or 2).
4. Press the down navigational button until the Output AR Preference option appears.
5. Use the left and right navigational buttons to locate the appropriate aspect ratio.

Selecting a Test Pattern

Selecting a test pattern for your input source can help determine if the displays are connected correctly. Perform these steps the select a test pattern:

1. Press the **VIDEO MENU** button on the front panel of the presentation switcher.
2. Press the down navigational button until the Output Test Pattern option appears.
3. Use the left and right navigational buttons to select the appropriate output test pattern.

Audio Settings

The following table lists the audio options available on the LCD display by pressing the AUDIO MENU button on the front panel:

Audio Menu Options	
Main Output Volume	Use the left and right navigational buttons to adjust the volume level of the amplified audio output. You can set the volume from 0 to 100. The volume setting reverts to 20 upon reboot.
Output 1 (AMP): ***Note**: The following output audio adjustments affects amplified output.*	
EQ 100Hz	Use the left and right navigational buttons to adjust the 100Hz level on the equalizer of the selected audio input. You can set the equalizer from -20 to +20dB in 1dB increments. The default value is 0.
EQ 215Hz	Use the left and right navigational buttons to adjust the 215Hz level on the equalizer of the selected audio input. You can set the equalizer from -20 to +20dB in 1dB increments. The default value is 0.
EQ 460Hz	Use the left and right navigational buttons to adjust the 460Hz level on the equalizer of the selected audio input. You can set the equalizer from -20 to +20dB in 1dB increments. The default value is 0.
EQ 1KHz	Use the left and right navigational buttons to adjust the 1KHz level on the equalizer of the selected audio input. You can set the equalizer from -20 to +20dB in 1dB increments. The default value is 0.
EQ 2.2KHz	Use the left and right navigational buttons to adjust the 2.2KHz level on the equalizer of the selected audio input. You can set the equalizer from -20 to +20dB in 12dB increments. The default value is 0.
EQ 5KHz	Use the left and right navigational buttons to adjust the 5KHz level on the equalizer of the selected audio input. You can set the equalizer from -20 to +20dB in 1dB increments. The default value is 0.

Audio Menu Options (Cont.)	
EQ 11.5KHz	Use the left and right navigational buttons to adjust the 11.5KHz level on the equalizer of the selected audio input. You can set the equalizer from -20 to +20dB in 1dB increments. The default value is 0.
Format	Use the left and right navigational buttons to change the audio format of the selected audio input. You can set the audio format to Stereo or Mono. The default setting is Stereo. This option is only available on the DVX-2100HD-SP.
UDM Output	Use the left and right navigational buttons to change which audio mix feeds to the UDM device. You can set the UDM output to Amp or Line.
Output 2 (LINE):	
EQ 100Hz	Use the left and right navigational buttons to adjust the 100Hz level on the equalizer of the selected audio input. You can set the equalizer from -20 to +20dB in 1dB increments. The default value is 0.
EQ 215Hz	Use the left and right navigational buttons to adjust the 215Hz level on the equalizer of the selected audio input. You can set the equalizer from -20 to +20dB in 1dB increments. The default value is 0.
EQ 460Hz	Use the left and right navigational buttons to adjust the 460Hz level on the equalizer of the selected audio input. You can set the equalizer from -20 to +20dB in 1dB increments. The default value is 0.
EQ 1KHz	Use the left and right navigational buttons to adjust the 1KHz level on the equalizer of the selected audio input. You can set the equalizer from -20 to +20dB in 1dB increments. The default value is 0.
EQ 2.2KHz	Use the left and right navigational buttons to adjust the 2.2KHz level on the equalizer of the selected audio input. You can set the equalizer from -20 to +20dB in 12dB increments. The default value is 0.
EQ 5KHz	Use the left and right navigational buttons to adjust the 5KHz level on the equalizer of the selected audio input. You can set the equalizer from -20 to +20dB in 1dB increments. The default value is 0.
EQ 11.5KHz	Use the left and right navigational buttons to adjust the 11.5KHz level on the equalizer of the selected audio input. You can set the equalizer from -20 to +20dB in 1dB increments. The default value is 0.
Vol Offset	Use the left and right navigational buttons to adjust the volume offset of the selected audio input. You can set the volume offset from -20 to +20dB in 2dB increments.
Type	Use the left and right navigational buttons to indicate whether the audio output of the selected audio input is Fixed or Variable. The default setting is Variable.
Source:	
Gain	Use the left and right navigational buttons to adjust the gain level of the selected input. You can set the gain from -24 to +24dB in 1dB increments. The default value is 0.
Output 1 Mix	Use the left and right navigational buttons to adjust the mix level of audio input 1. You can set the mixer level from 0-100.
Output 2 Mix	Use the left and right navigational buttons to adjust the mix level of audio input 2. You can set the mixer level from 0-100.
Format	Use the left and right navigational buttons to change the audio format of the selected audio input. You can set the audio format to Stereo or Mono. The default setting is Stereo.
Mic Input:	
Mic Input Type	Use the left and right navigational buttons to select Dual Mono or Single Stereo as the microphone input type. Select Dual Mono when using independent microphones. Each mono microphone input will be mixed onto both the right and left channels. Select Single Stereo when connecting a single stereo source. Microphone input 1 will be mixed only onto the left channel and Microphone input 2 will be mixed only onto the right channel.

Audio Menu Options (Cont.)	
Mic 1: ***Note:*** *If Mic Input Type is set to Single Stereo mode then the Mic 1 settings bellow will apply to both microphone inputs and Mic 2 settings will have no affect.*	
Gain	Use the left and right navigational buttons to adjust the gain/attention level of microphone 1. You can set the gain from -24 to +24dB in 1dB increments.
Output 1 Mix	Use the left and right navigational buttons to adjust the mix level of microphone 1. You can set the mixer level from 0 to 100% in 1% increments.
Output 2 Mix	Use the left and right navigational buttons to adjust the mix level of microphone 1. You can set the mixer level from 0 to 100% in 1% increments.
Bass	Use the left and right navigational buttons to adjust the bass level of microphone 1. You can set the bass level from -20 to +20dB in 1dB increments.
Treble	Use the left and right navigational buttons to adjust the treble level of microphone 1. You can set the treble level from -20 to +20dB in 1dB increments.
Preamp Vol	Use the left and right navigational buttons to adjust the preamp volume level of microphone 1. You can set the treble level from -20 to +20dB in 1dB increments.
Phantom Power	Use the left and right navigational buttons to turn on or turn off phantom power for microphone 1. You can set the Phantom Power to On or Off. The default setting is Off.
Limiter	Use the left and right navigational buttons to turn on or turn off the limiter function which suppresses loud noise bursts from dropping the mic and helps avoid feedback noise. You can set the Limiter to On or Off. The default setting is Off. ***Note:*** *Limiter sensitivity is affected by the Preamp Vol setting, but not by the Gain setting. Increasing Preamp Vol will cause the limiter to activate at a lower input threshold. Decreasing Preamp Vol will cause the limiter to activate at a higher input threshold. After adjusting Preamp Vol to set the Limiter sensitivity, use the Gain setting to achieve the desired overall input gain.*
Mic 2: ***Note:*** *If Mic Input Type is set to Single Stereo mode then the Mic 2 settings bellow will have no affect.*	
Gain	Use the left and right navigational buttons to adjust the gain/attention level of microphone 2. You can set the gain from 0 to +30dB in 1dB increments.
Output 1 Mix	Use the left and right navigational buttons to adjust the mix level of microphone 2. You can set the mixer level from 0 to 100% in 1% increments.
Output 2 Mix	Use the left and right navigational buttons to adjust the mix level of microphone 2. You can set the mixer level from 0 to 100% in 1% increments.
Bass	Use the left and right navigational buttons to adjust the bass level of microphone 2. You can set the bass level from -20 to +20dB in 1dB increments.
Treble	Use the left and right navigational buttons to adjust the treble level of microphone 2. You can set the treble level from -20 to +20dB in 1dB increments.
Preamp Vol	Use the left and right navigational buttons to adjust the preamp volume level of microphone 1. You can set the treble level from -20 to +20dB in 1dB increments.
Phantom Power	Use the left and right navigational buttons to turn on or turn off phantom power for microphone 2. You can set the Phantom Power to On or Off. The default setting is Off.
Limiter	Use the left and right navigational buttons to turn on or turn off the limiter function which suppresses loud noise bursts from dropping the mic and helps avoid feedback noise. You can set the Limiter to On or Off. The default setting is Off.
Revert to Default	Use the left and right navigational buttons to indicate that you want to return all audio options to their default settings.

Tools Menu

Press the AUDIO MENU and VIDEO MENU buttons simultaneously to access the Tools menu and display system information on the LCD display. Use the UP and DOWN navigational buttons to scroll through the menu options. These options are view-only.

Tools Menu (view-only)	
System Number:	Displays the system number of the presentation switcher.
Serial Number:	Displays the serial number of the presentation switcher.
MAC Address:	Displays the MAC address of the presentation switcher.
IP Address Type:	Displays whether the IP address is static or DHCP.
IP Address:	Displays the IP address of the network.
Subnet Mask:	Displays the subnet mask of the network.
Gateway:	Displays the gateway address of the network.
IP DNS Addr:	Displays the IP or DNS address of the device.
Master FW Version:	Displays the version number of the firmware the Master is using.
Device FW Version:	Displays the version number of the firmware the device is using.
DSP FW Version:	Displays the version number of the DSP firmware the presentation switcher is using.
FPGA FW Version:	Displays the version number of the video FPGA the presentation switcher is using.
Diagnostic Codes:	Displays informational codes useful for troubleshooting and diagnostics.
LCD Intensity:	Use the left and right navigational buttons to adjust the backlight intensity of the LCD display. You can set the LCD Intensity between 0 and 100. The default setting is 50.
LED Intensity:	Use the left and right navigational buttons to adjust the backlight intensity of the front panel buttons. You can set the LED Intensity between 0 and 100. The default setting is 50.

DVX-2100HD WebConsole

The DVX-2100HD features an on-board WebConsole that allows you to configure the device and make various adjustments to audio/video and system settings. The WebConsole is accessed via a web browser on a PC that has network access to the DVX-2100HD.

The DVX-2100HD WebConsole can be divided into two primary parts:

- Audio/Video Switcher Configuration Settings
- Master Controller Configuration Options

Accessing the WebConsole

From any PC that has access to the LAN that the target DVX-2100HD resides on:

1. Open a web browser and type the IP Address of the target DVX-2100HD in the Address Bar.
2. Press **Enter** to access WebConsole for that DVX-2100HD. The initial view is the *WebControl* page (FIG. 50).

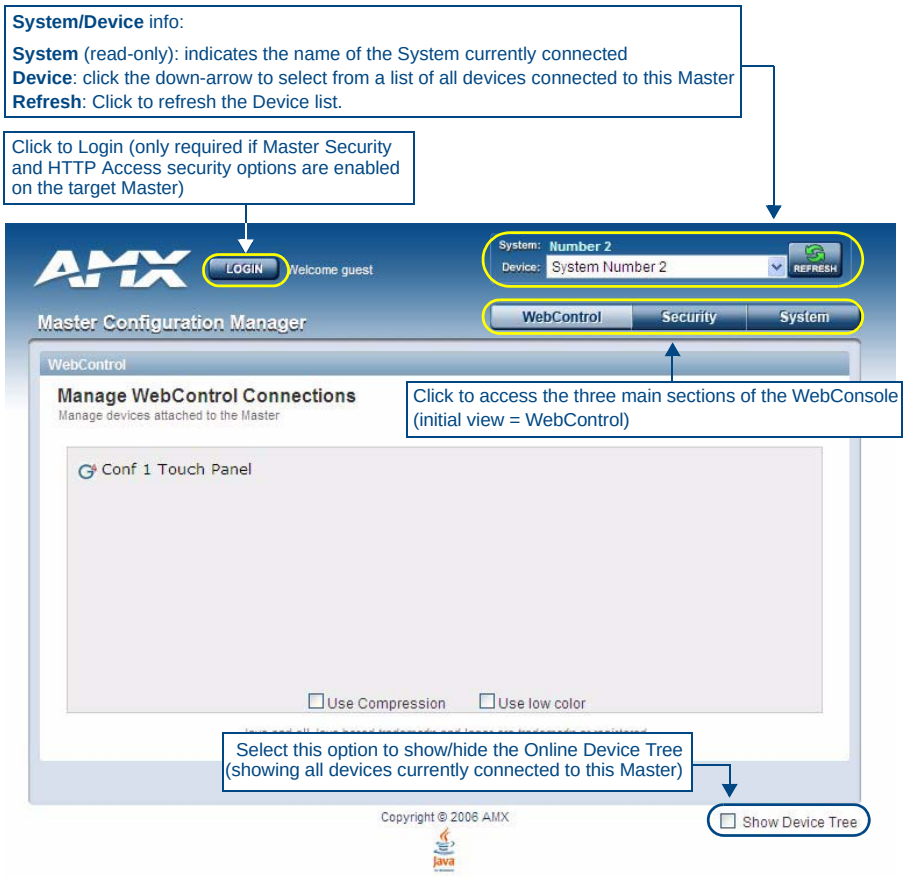

System/Device info:
System (read-only): indicates the name of the System currently connected
Device: click the down-arrow to select from a list of all devices connected to this Master
Refresh: Click to refresh the Device list.
Click to Login (only required if Master Security and HTTP Access security options are enabled on the target Master)
LOGIN
Welcome guest
System: Number 2
Device: System Number 2
REFRESH
Master Configuration Manager
WebControl
Security
System
WebControl
Manage WebControl Connections
Manage devices attached to the Master
Click to access the three main sections of the WebConsole (initial view = WebControl)
Conf 1 Touch Panel
Use Compression
Use low color
Select this option to show/hide the Online Device Tree (showing all devices currently connected to this Master)
Copyright © 2006 AMX
Show Device Tree

FIG. 50 Master Configuration Manager - WebControl Page (initial view)

Master Controller Configuration Options

The DVX-2100HD features a NetLinx central controller, functionally equivalent to a NI-2100. Likewise, the DVX-2100HD provides the same set of configuration pages that are available to the NI-2100.

NOTE

All NI-Series NetLinx Masters (including the NI-2100 that is internal to the DVX-2100HD) share a common WebConsole, as described in the NI Series WebConsole & Programming Guide (available at www.amx.com).

WebConsole - Master Configuration Manager

The DVX-2100HD (and all other NetLinx Masters) features a built-in WebConsole that allows you to make various configuration settings via a web browser on any PC that has access to the Master.

The webconsole consists of a series of web pages that are collectively called the "Master Configuration Manager" (FIG. 50).

The webconsole is divided into three primary sections, indicated by three control buttons across the top of the main page (FIG. 51):

FIG. 51 WebConsole Control Buttons

- **WebControl**: This is the option that is pre-selected when the WebConsole is accessed. Use the options in the *Manage WebControl Connections* page to manage G4WebControl connections.
- **Security**: Click to access the System Security page. The options in this page allow you to configure various aspects of NetLinx System and Security on the Master.
- **System**: Click to access the System Details page. The options on this page allow you to view and configure various aspects of the NetLinx System.

Master Configuration Manager - Additional Documentation

For a full description of all Master Configuration pages, refer to the NI Series WebConsole & Programming Guide, available at www.amx.com.

Using a Web Browser

You can access the configuration settings for the presentation switcher by using a web browser. (AMX supports Internet Explorer 7.0 for Windows and Mozilla Firefox 3.6 users.) The system configuration pages are available by entering the IP address of the NetLinx master into the location bar of your web browser. Entering your IP address into your web browser opens the Main WebControl page (FIG. 52).

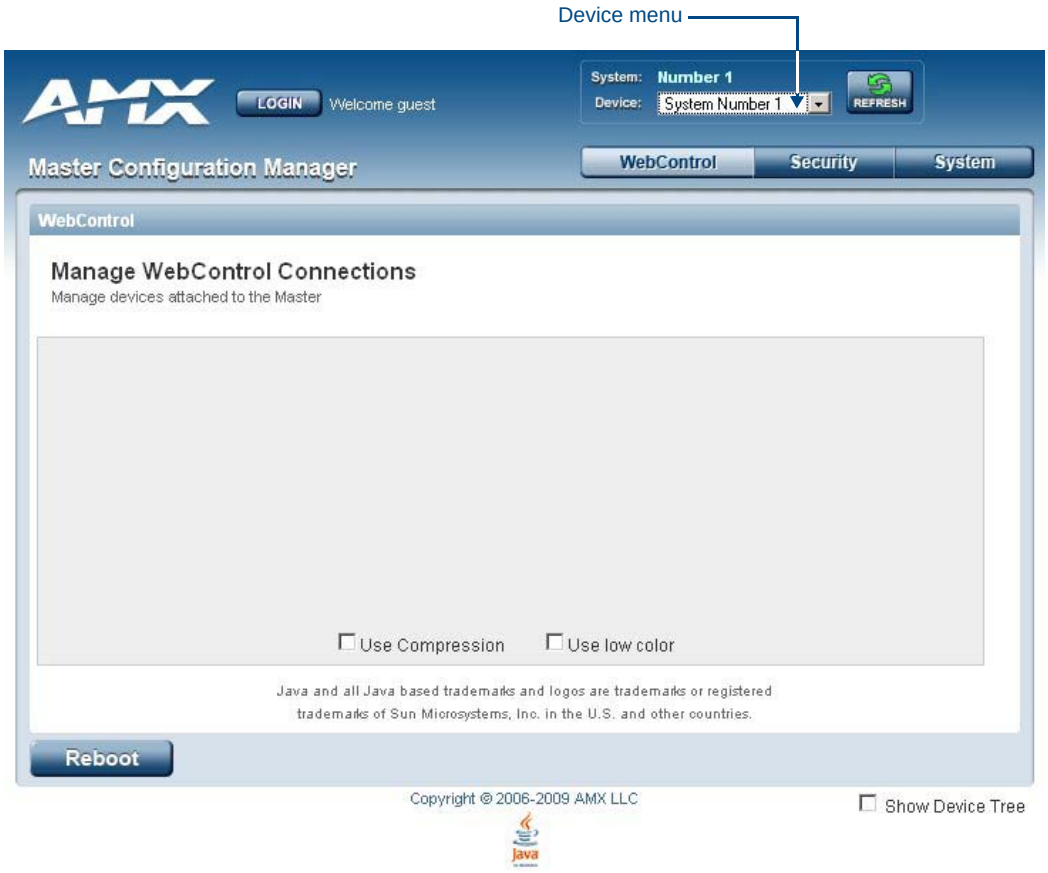


FIG. 52 Main WebControl page

NOTE

The configuration screens appear in a pop-up window separate from the Main WebControl screen. Make sure the pop-up blocker in your web browser is disabled.

Perform these steps to access the configuration settings:

1. Open a web browser.
2. Enter the IP address of the presentation switcher in the location bar of the web browser. If you do not know your switcher's IP address, see the *Locating the IP Address of the Presentation Switcher* section on page 50.

NOTE

WebControl requires that you install the latest version of the Adobe Flash Player plug-in for your browser. If your browser does not have the Flash Player plug-in installed, you will be prompted to install it.

The Main WebControl page opens (FIG. 52).

3. Use the Device options menu at the top of the screen to select the *<DEVICE #> - DVX-2100HD*. The Configuration page opens in a separate pop-up window (FIG. 54).

If a web browser or Flash Player is not available, the presentation switcher's front panel and NetLinx commands provide equivalent controls for audio/video configuration. See the *Using the Front Panel Buttons* section on page 41 for more information.

Locating the IP Address of the Presentation Switcher

You can locate the IP address of the presentation switcher by using the buttons on the front panel of the presentation switcher. The IP address appears on the LCD display on the front panel of the presentation switcher. Perform these steps to locate the IP address of the unit:

1. Simultaneously press the **Video Menu** and **Audio Menu** buttons. The Tools menu appears on the LCD display.
2. Use the **UP** and **DOWN** navigational arrow buttons to navigate through the options until you locate the presentation switcher's IP address. Note the IP address for future reference.

NOTE

You can use the Tools Menu to verify current TCP/IP settings using the UP and DOWN navigational buttons.

Global Settings

The WebConsole Configuration page contains settings that appear on each tab and apply globally. FIG. 53 indicates the global options available on this page.

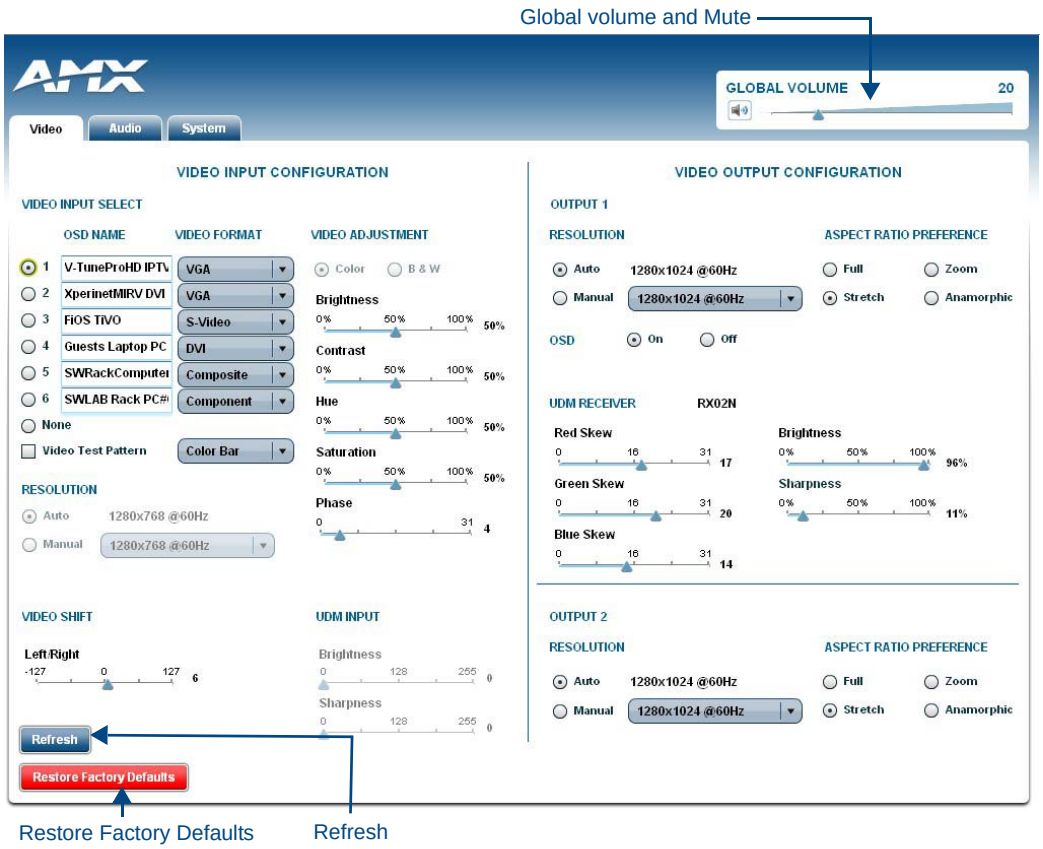


FIG. 53 WebConsole Configuration page

The following table lists the global options for the WebConsole Configuration page:

Global Options	
Mute	Turns off the audio for the device.
Global Volume	Sets the output volume.
Refresh	Click to reload all settings.
Restore Factory Defaults	Click to reset the input signal's settings to their factory default.

Video Settings

FIG. 54 displays the Video page. The Video page enables you to set the resolution, aspect ratio, and picture qualities of each individual video input. Any changes you make reflect instantaneously on your source input and output devices.

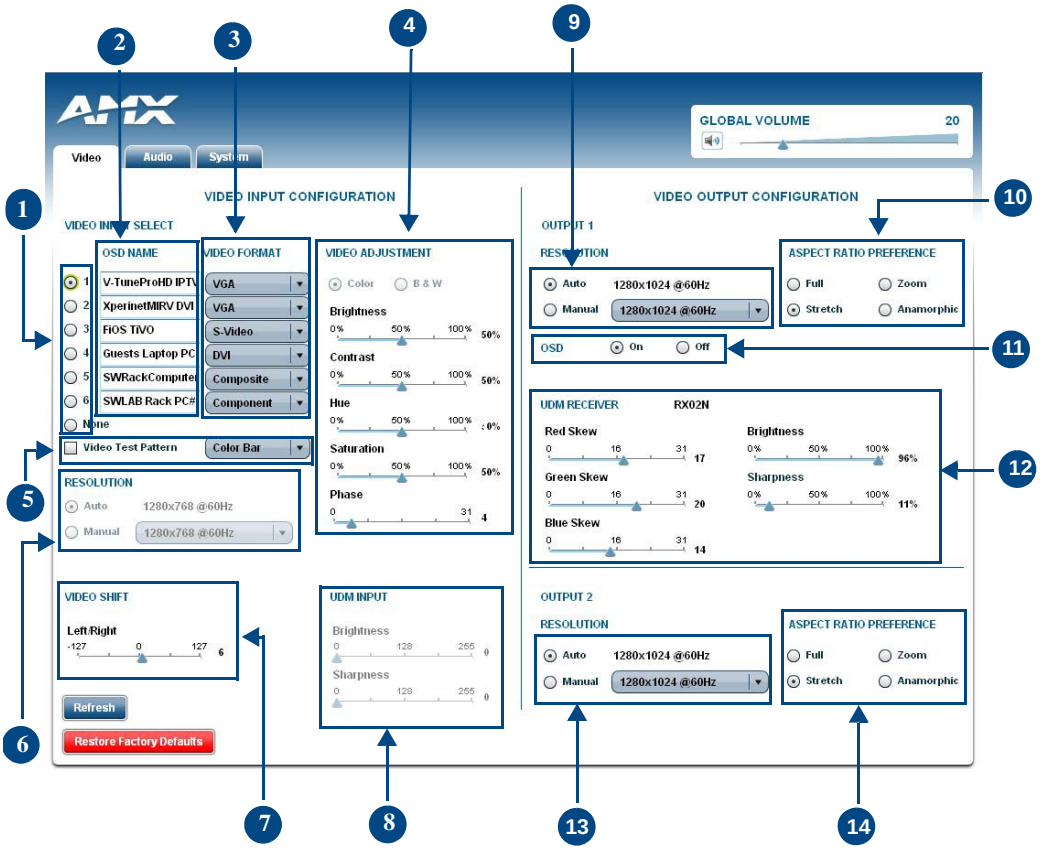


FIG. 54 WebConsole Configuration page - Video tab

1 - **Input Select**: Select the corresponding option button to select the incoming video signal. When you select an input, the other options on the page change to reflect the input's current settings. The option button changes color depending on whether video is detected on the selected input. Green indicates a signal is detected, yellow indicates a signal is detected but cannot be identified, and red indicates no signal is detected. You can only select one video input at a time. Select None to send no signal to the output display. You can click the Refresh button on the page to update the color coding on the Video Input Select Radio buttons. Click Refresh after connecting a new input or correcting a resolution on the input so you can be sure it is working.

2 - **OSD Name**: Enter a unique name for the device in the space provided to more easily identify each input. The name you enter here appears in the on-screen display (OSD), if enabled. These fields are optional.

3 - **Video Format**: Use the drop-down menus to select the video format for each video input. The selection should indicate the type of connection used to connect the video source to the switcher. You can choose from DVI, VGA, Component, S-Video, and Composite.

4 - **Video Adjustment**: Use the sliders to alter the various level adjustments applied to the incoming video image.

5 - **Video Test Pattern**: Click the check box to activate a video test pattern to be sent to both outputs. Afterward, you can choose a test pattern from the corresponding drop-down menu. You can choose from Color Bar, Gray Ramp, SMPTE Bar, HiLoTrak, Pluge, and Cross Hatch. Click the check box again to deactivate the test pattern and return to viewing the selected input.

6 - **Input Resolution**: Click Auto to have the unit automatically detect the video resolution for the selected input signal, or click Manual to manually select the video resolution for the selected input signal. After clicking the Manual option button, select a resolution from the corresponding drop-down menu.

7 - **Video Shift**: Use the slider to shift the position of the video image left and right.

8 - **UDM Input**: Use the sliders to alter the brightness (gain) and sharpness (compensation) levels for the UDM input.

9 - **Output 1 Resolution**: Click Auto to have the unit automatically set the video resolution for display output 1 based on the EDID information received from the connected display device. Click Manual to manually select the video resolution for display output 1. After clicking the option button, select a resolution from the corresponding drop-down menu.

10 - **Output 1 Aspect Ratio Preference**: Select the appropriate option button to indicate the aspect ratio of output signal 1. There is a separate group of aspect ratio settings for each output. You can choose from Full, Zoom, Stretch, and Anamorphic.

11 - **OSD Overlay**: Indicate whether you want the on-screen display overlay to be turned on or off.

12 - **UDM Receiver**: Use the sliders to alter the UDM receiver's skew, brightness, and sharpness levels. These option is unavailable if you are not using a UDM receiver for your video output.

13 - **Output 2 Resolution**: Click Auto to have the unit automatically set the video resolution for display output 2 based on the EDID information received from the connected display device. Click Manual to manually select the video resolution for display output 2. After clicking the option button, select a resolution from the corresponding drop-down menu.

14 - **Output 2 Aspect Ratio Preference**: Select the appropriate option button to indicate the aspect ratio of output signal 2. There is a separate group of aspect ratio settings for each output. You can choose from Full, Zoom, Stretch, and Anamorphic.

Your video configuration is not affected by a power loss, restarting the unit, or upgrading the firmware.

Audio Settings

The Audio page enables you to set the audio qualities for each audio input, microphone input, amplifier output, and line output. Any changes you make reflect instantaneously on your source input and output devices. FIG. 56 displays the Audio page for the DVX-2100HD-SP. This page differs from the page for the DVX-2100HD-T in that it contains Stereo and Mono options for the Amplified Output.

FIG. 55 WebConsole Configuration page - Audio tab (DVX-2100HD-SP only)

FIG. 56 displays the Audio page for the DVX-2100HD-T.

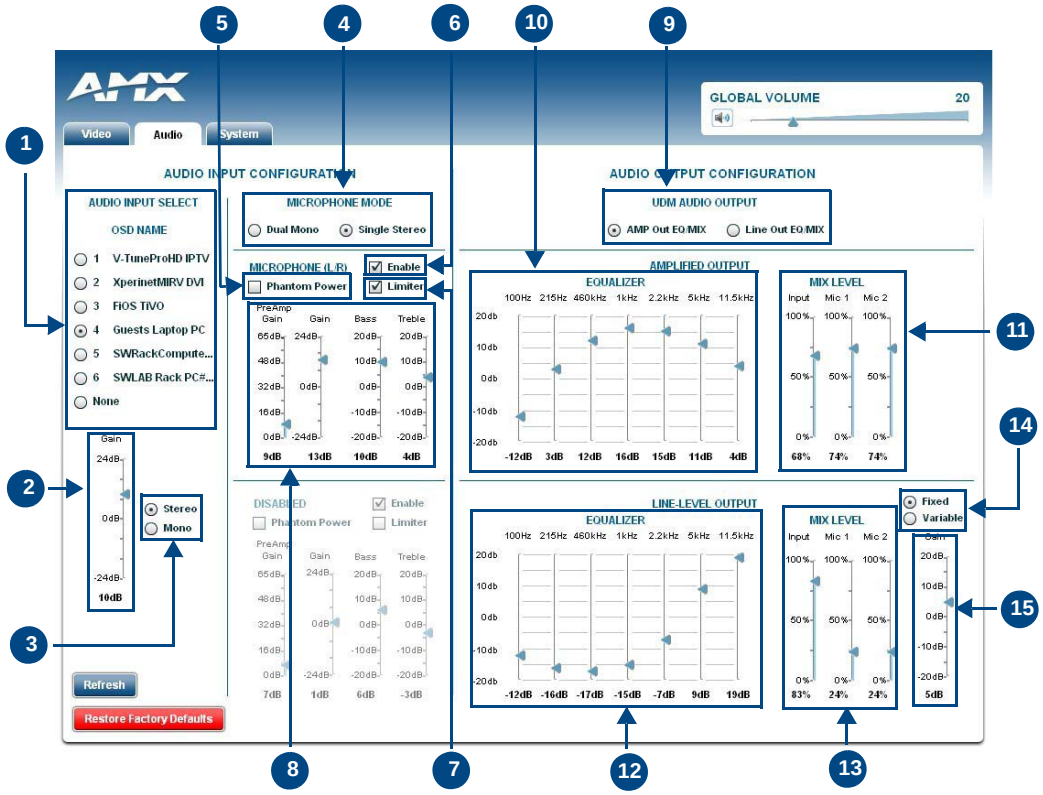


FIG. 56 WebConsole Configuration page - Audio tab (DVX-2100HD-T only)

1 - **Audio Input**: Select the corresponding option button to activate an incoming audio signal. You can only select one audio input at a time. Select None if you do not want any audio.

2 - **Gain**: Use the slider to set the gain level for the selected audio input.

3 - **Stereo/Mono**: Click the appropriate option button to indicate whether the incoming audio signal is a stereo or mono signal.

4 - **Microphone Mode**: Click Dual Mono when using independent microphones. Each mono microphone input is mixed onto both the right and left channels. Click Single Stereo when connecting a single stereo source. Microphone input 1 is mixed only onto the left channel and Microphone input 2 is mixed only onto the right channel.

5 - **Phantom Power**: Click the check box to activate phantom power for the mic. The unit supports a supply of up to 48V of phantom power for each mic input.

***Note**: Enabling Phantom Power could damage some devices connected to the microphone input if the devices are not designed to accept it.*

6 - **Enable**: Click the checkbox to activate the microphone.

7 - **Limiter**: Click the checkbox to activate the limiter function which suppresses loud noise bursts from dropping the mic and helps avoid feedback noise.

8 - **Microphone (L/R)**: There are two separate sections for configuring Mic 1 and Mic 2. If you select Single Stereo for the Microphone Mode, Mic 1 settings affect both Mic 1 and Mic 2 inputs and the section for Mic 2 is disabled. Selecting Dual Mono activates the Mic 2 section, which contains identical options as the section for Mic 1. You can set the following options for each microphone:

PreAmp Gain: Use the slider to set the preamp gain level for the mic. You can set the PreAmp Gain between 0 and 65 dB in 1 dB steps. Set the PreAmp Gain to 0 for line-level inputs. ***Note:*** *Limiter sensitivity is affected by the Preamp Vol setting, but not by the Gain setting. Increasing Preamp Vol will cause the limiter to activate at a lower input threshold - Decreasing Preamp Vol will cause the limiter to activate at a higher input threshold. After adjusting Preamp Vol to set the Limiter sensitivity, use the Gain setting to achieve the desired overall input gain.*

Gain: Use the slider to set the input gain level for the mic. You can set the gain between -24 and 24 dB in 1 dB steps.

Bass: Use the slider to set the bass level for the mic. You can set the bass between -20 and 20 dB in 1 dB steps.

Treble: Use the slider to set the treble level for the mic. You can set the treble between -20 and 20 dB in 1 dB steps.

9 - **UDM Audio Output**: Click AMP Out EQ/MIX to feed the amplifier audio mix to the UDM device. Click Line Out EQ/MIX to feed the line out audio mix to the UDM device.

10 - **Amplified Output Equalizer**: Use the sliders to set the audio levels for the outgoing signal. You can set each setting between -20 and 20 dB in 1 dB steps.

11 - **Amplified Output Mix Level**: Use the sliders to set the amplified output volume levels for the outgoing audio signal and the two microphones.

12 - **Line Level Output Amplifier**: Use the sliders to set the audio levels for the line level output. You can set each setting between -20 and 20 dB in 1 dB steps.

13 - **Line Level Output Mix Level**: Use the sliders to set the volume levels for the line level output and the two microphones.

14 - **Fixed/Variable**: Click the appropriate option button to indicate whether the line level output is fixed or variable.

15 - **Gain**: Use the sliders to set the gain level for the line level output. You can set the line level output gain between -20 and 20 dB in 1 dB steps.

Your audio configuration is not affected by a power loss, restarting the unit, or upgrading the firmware.

System Settings

FIG. 57 displays the System page. The System page enables you to set the front panel button lockout and view the device information for the switcher.

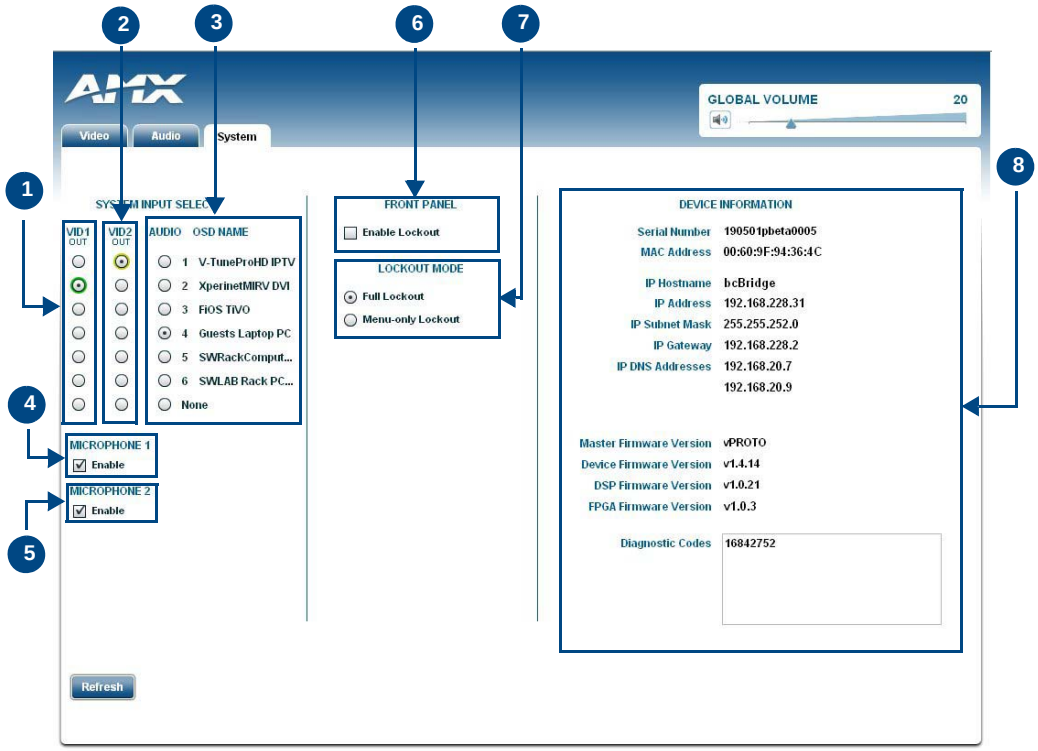


FIG. 57 WebConsole Configuration page - System page

1 - **Vid 1 Out**: Select an option button to switch video from the corresponding input to Video Output 1. Green indicates a signal is detected, yellow indicates a signal is detected but cannot be identified, and red indicates no signal is detected. You can only select one video output at a time. Select None if you do not want any video.

2 - **Vid 2 Out**: Select an option button to switch video from the corresponding input to Video Output 2. Green indicates a signal is detected, yellow indicates a signal is detected but cannot be identified, and red indicates no signal is detected. You can only select one video output at a time. Select None if you do not want any video.

3 - **Audio**: Select an option button to select the corresponding audio input. You can only select one audio output at a time. Select None if you do not want any audio.

4 - **Microphone 1**: Click the checkbox to activate the microphone connected to Mic Input 1.

5 - **Microphone 2**: Click the checkbox to activate the microphone connected to Mic Input 2.

6 - **Front Panel Lockout**: Click the check box to activate a lockout of some or all of the buttons on the front panel. Select the type of lockout in the Lockout Mode section (see below.)

7 - **Lockout Mode**: Select Full Lockout if you want the lockout to block the use of all front panel buttons. Select Menu-only Lockout if you want the lockout to only block the use of the menu options on the front panel. The Macro, Input select, Mic Select, Volume and Mute buttons are still available with this option.

8 - **Device Information**: This area provides the following information about your unit:

- Serial number
- MAC Address
- IP Hostname
- IP Address
- IP Subnet Mask
- IP Gateway
- IP DNS Addresses
- Master Firmware Version
- Device Firmware Version
- DSP Firmware Version
- FPGA Firmware Version
- Diagnostic Codes

This information is read-only.

DVX-2100HD Audio Processing Functional Block Diagram

FIG. 58 displays a diagram detailing the audio processors on a DVX-2100HD.

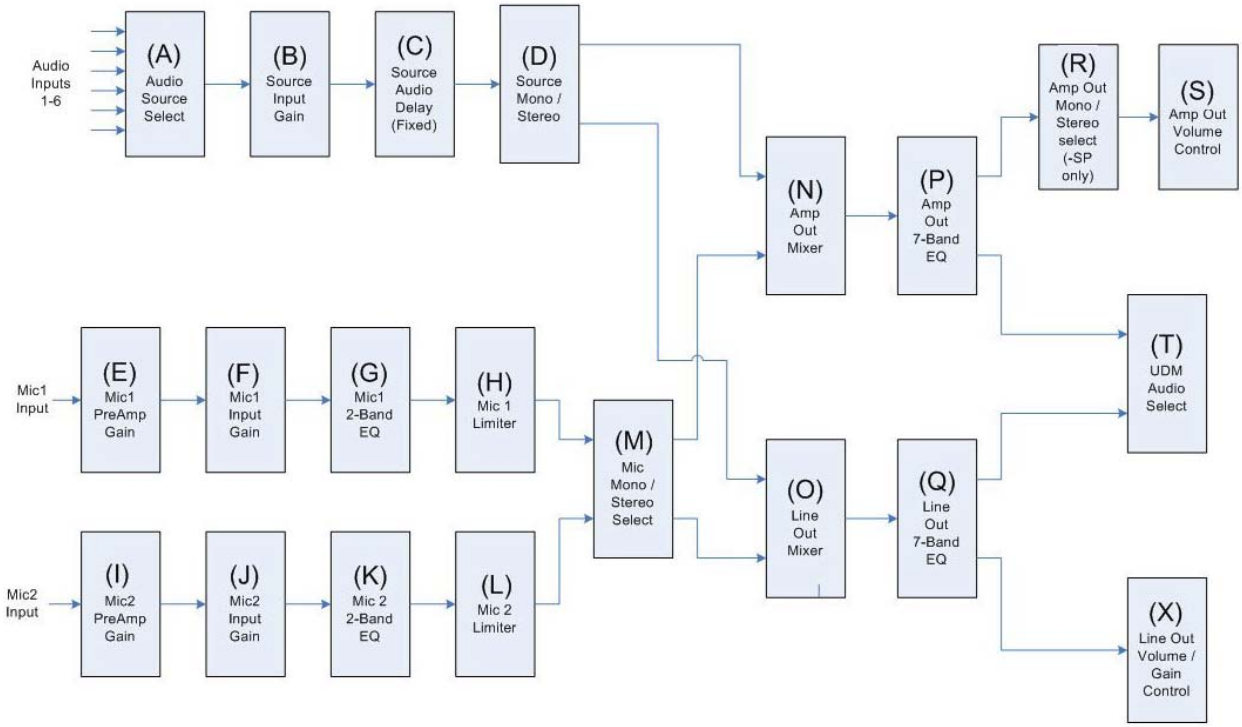

Audio Inputs 1-6
(A) Audio Source Select
(B) Source Input Gain
(C) Source Audio Delay (Fixed)
(D) Source Mono / Stereo
(N) Amp Out Mixer
(P) Amp Out 7-Band EQ
(R) Amp Out Mono / Stereo select (-SP only)
(S) Amp Out Volume Control
(T) UDM Audio Select
Mic1 Input
(E) Mic1 PreAmp Gain
(F) Mic1 Input Gain
(G) Mic1 2-Band EQ
(H) Mic 1 Limiter
(M) Mic Mono / Stereo Select
(O) Line Out Mixer
(Q) Line Out 7-Band EQ
Mic2 Input
(I) Mic2 PreAmp Gain
(J) Mic2 Input Gain
(K) Mic 2 2-Band EQ
(L) Mic 2 Limiter
(X) Line Out Volume / Gain Control

FIG. 58 DVX-2100HD Audio Processing Functional Block Diagram

The following table provides details and configuration settings for each part of the diagram:

Audio Processing Functional Block Diagram Configuration Settings			
Block	*Description*	*NetLinx Command*	*Port*
A - Audio Source Select	Select the desired audio input source.	AI<input>O<output> or CLAUDIOI<input>O<output> (see CI<input>O<output> for switching both audio and video.) See *AI<input>O<output>* on page 70, *CL* on page 76, or *CI<input>O<output>* on page 76 for more information.	1
B - Source Input Gain	Adjust the input audio level gain/attenuation for each input.	GAIN-<value>, Level 5, or Ramping Channels 140 and 141. See *GAIN* on page 74 for more information.	1-6
C - Source Audio Delay		This is a fixed value, and is not adjustable via code.	
D - Source Mono/ Stereo	Choose whether the selected input is a Stereo or Mono source.	AUDIN_STEREO-<ENABLE|DISABLE>. See *AUDIN_STEREO* on page 70 for more information.	1-6
E - Mic1 PreAmp Gain	Adjust the PreAmp Gain for Mic 1. This should be set to 0 for line-level inputs.	AUDMIC_PREAMP_GAIN-<value> or Level 20. See *AUDMIC_PREAMP_GAIN* on page 72 for more information.	7
F - Mic1 Input Gain	Adjust the input gain setting for Mic 1.	AUDMIC_GAIN-<value>, Level 5, or Ramping Channels 140 and 141. See *AUDMIC_GAIN* on page 71 for more information.	7

Audio Processing Functional Block Diagram Configuration Settings (Cont.)			
Block	*Description*	*NetLinx Command*	*Port*
G - Mic1 2-Band Equalizer	Adjust the bass and treble for Mic 1.	INPUTEQ-<band>=<value> or Levels 21 and 22. See *INPUTEQ* on page 74 for more information.	7
H - Mic1 Limiter	Turn on or turn off the mic limiter for Mic 1. This protects the speakers from loud transients like those seen when a microphone is dropped. This also provides significant feedback protection.	AUDMIC_LIMITER-<ENABLE|DISABLE>. See *AUDMIC_LIMITER* on page 71 for more information.	7
I - Mic2 PreAmp Gain	Adjust the PreAmp Gain for Mic 2. This should be set to 0 for line-level inputs.	AUDMIC_PREAMP_GAIN-<value> or Level 20. See *AUDMIC_PREAMP_GAIN* on page 72 for more information.	8
J - Mic2 Input Gain	Adjust the input gain setting for Mic 2.	AUDMIC_GAIN-<value>, Level 5, or Ramping Channels 140 and 141. See *AUDMIC_GAIN* on page 71 for more information.	8
K - Mic2 2-Band Equalizer	Adjust the bass and treble for Mic 2.	INPUTEQ-<band>=<value> or Levels 21 and 22. See *INPUTEQ* on page 74 for more information.	8
L - Mic2 Limiter	Turn on or turn off the mic limiter for Mic 2. This protects the speakers from loud transients like those seen when a microphone is dropped. This also provides significant feedback protection.	AUDMIC_LIMITER-<ENABLE|DISABLE>. See *AUDMIC_LIMITER* on page 71 for more information.	8
M - Mic Mono/Stereo Select	Choose whether the microphone inputs are being used for independent mono sources or a single stereo source.	AUDMIC_STEREO-<ENABLE|DISABLE>. See *AUDMIC_STEREO* on page 72 for more information.	7 or 8
N - Amp Out Mixer	Set the relative mix levels on the amplified output for the selected source and microphones.	XPOINT-<value>,<input>,<output> or Levels 41-43. See *XPOINT* on page 75 for more information.	1
O - Line Out Mixer	Set the relative mix levels on the Line-Level output for the selected source and microphones.	XPOINT-<value>,<input>,<output> or Levels 41-43. See *XPOINT* on page 75 for more information.	2
P - Amp Out 7-Band Equalizer	Adjust the Equalizer settings for the amplified output.	EQUALIZER-<band>=<value> or Levels 31-37. See *EQUALIZER* on page 74 for more information.	1
Q - Line Out 7-Band Equalizer	Adjust the Equalizer settings for the Line-Level output.	EQUALIZER-<band>=<value> or Levels 31-37. See *EQUALIZER* on page 74 for more information.	2
R - Amp Out Mono/ Stereo Select	Put the Amplified output in Mono or Stereo mode. This option is for -SP model devices only.	AUDOUT_STEREO-<ENABLE|DISABLE>. See *AUDOUT_STEREO* on page 73 for more information.	1

Audio Processing Functional Block Diagram Configuration Settings (Cont.)			
Block	*Description*	*NetLinx Command*	*Port*
S - Amp Out Volume Control	Adjust the volume of the Amplified output. Also adjusts the volume of the Line-Level output if it is set to Variable mode.	VOLUME-<value> or Level 1 or Ramping Channels 24 and 25. For mute, use AUDIO_MUTE-<ENABLE|DISABLE> or Channel 26 (momentary) or Channel 199 (Toggling). See *VOLUME* on page 75 or *AUDIO_MUTE* on page 71 for more information.	1
T - UDM Audio Select	Choose whether the Audio sent out the UDM port is the same as the Amplified out or Line-Level out.	AUDOUT_UDM-<VALUE>. See *AUDOUT_UDM* on page 73 for more information.	1
X - Line Out Volume/ Gain Control	Set the audio output of the selected audio input to Fixed or Variable	If in Variable mode, see Step S. If in Fixed mode, set the output gain of the line-level output by using Level 1.	2

NetLinx Firmware Upgrades

Overview

The NetLinx Studio software application (available for free download from www.amx.com) provides the ability to transfer KIT firmware files to a NetLinx device such as the DVX-2100HD.

To send firmware files in NetLinx Studio, select **Tools > Firmware Transfers > Send to NetLinx Device**.

Before You Start

1. Verify you have the latest version of NetLinx Studio on your PC. Use the **Web Update** option in NetLinx Studio's Help menu to obtain the latest version. Alternatively, go to www.amx.com and login as a Dealer to download the latest version.
2. Go to **www.amx.com** and download the latest Firmware file. Firmware files are available to download from www.amx.com - on the product's page in the online catalog.
3. Verify that an Ethernet cable is connected from the DVX-2100HD to the Ethernet Hub.
4. Verify that the DVX-2100HD is powered On.
5. Determine the Device Number assigned to the target DVX-2100HD.
   - By default, the Device Number assigned to the DVX-2100HD is **0** (zero). (The Master device number is always 0 and cannot be changed.)
   - The Device Number can be viewed on the DVX-2100HD Configuration Manager - Device Configuration page.
6. Launch NetLinx Studio and open the Online Device Tree.

Sending Firmware (*.KIT) Files to the DVX-2100HD

Use the *Firmware Transfers* options in the Tools menu to update the firmware in the DVX-2100HD. NetLinx Devices such as the DVX-2100HD use KIT files for firmware upgrades.

A Kit file (.KIT) is a package of several files, all of which are required to upgrade the firmware, and are available online via www.amx.com. Firmware download links are provided in the relevant product page.*

- The Online Device Tree (Online Tree tab of the Workspace Window) displays information about each online device, including the current firmware version.
- Before attempting to upgrade the firmware, you must have the appropriate Kit file for your DVX-2100HD.
- The DVX-2100HD contains three devices which each require a separate Kit file. These three devices must be kept at compatible firmware versions for proper operation.
  - Device ID 0: NetLinx Master Controller
  - Default Device ID 5001: Device Control Ports
  - Default Device ID 5002: A/V Switcher/Scaler
- You can also upgrade firmware on a connected UDM-RX02N. By default, this device ID is 5003.

To update NetLinx firmware:

1. Choose **Tools > Firmware Transfers > Send to NetLinx Device** to open the *Send To NetLinx Device* dialog (FIG. 59).

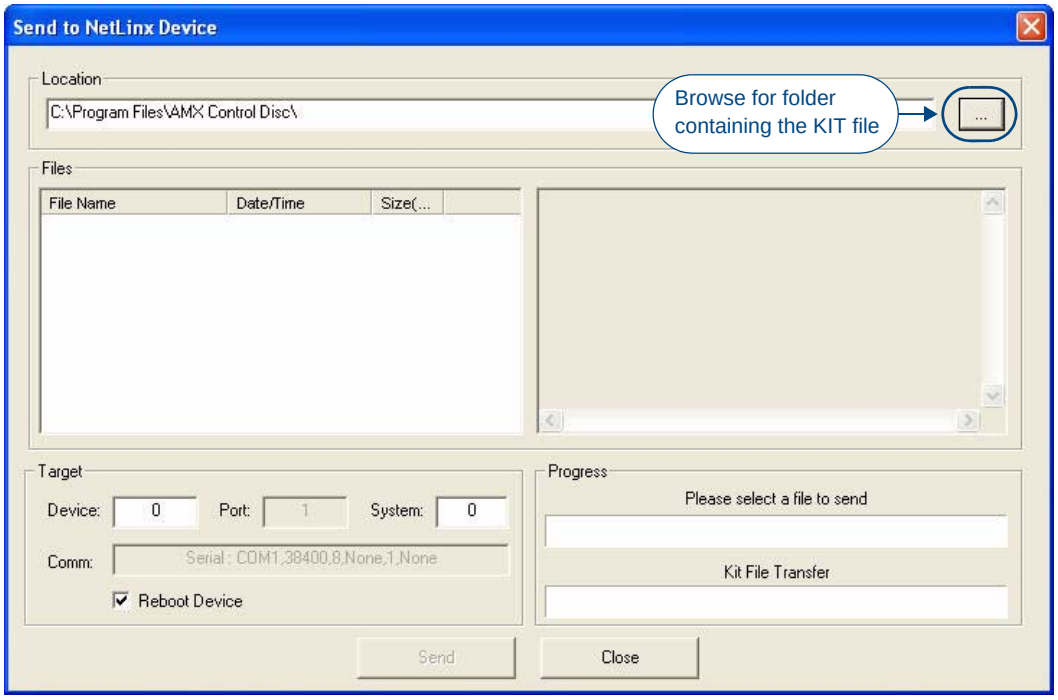


FIG. 59 Send To NetLinx Device dialog (NetLinx Studio)

2. Click the **Browse (...)** button to navigate to the target directory in the *Browse For Folder* dialog (FIG. 60).

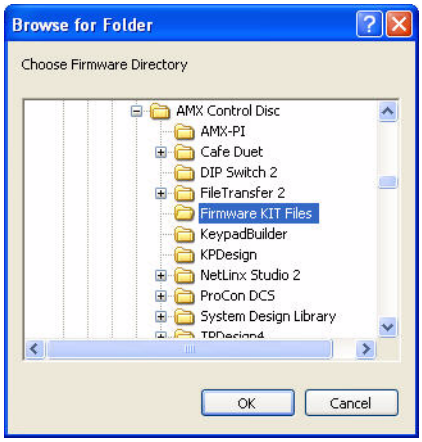


FIG. 60 Browse For Folder dialog (NetLinx Studio)

- The selected directory path is displayed in the *Send To NetLinx Device* dialog (*Location* text box).
- Assuming that the specified target directory contains one or more KIT files, the KIT files in the selected directory are displayed in the *Files* list box, with the file's last modified date and time (FIG. 61).

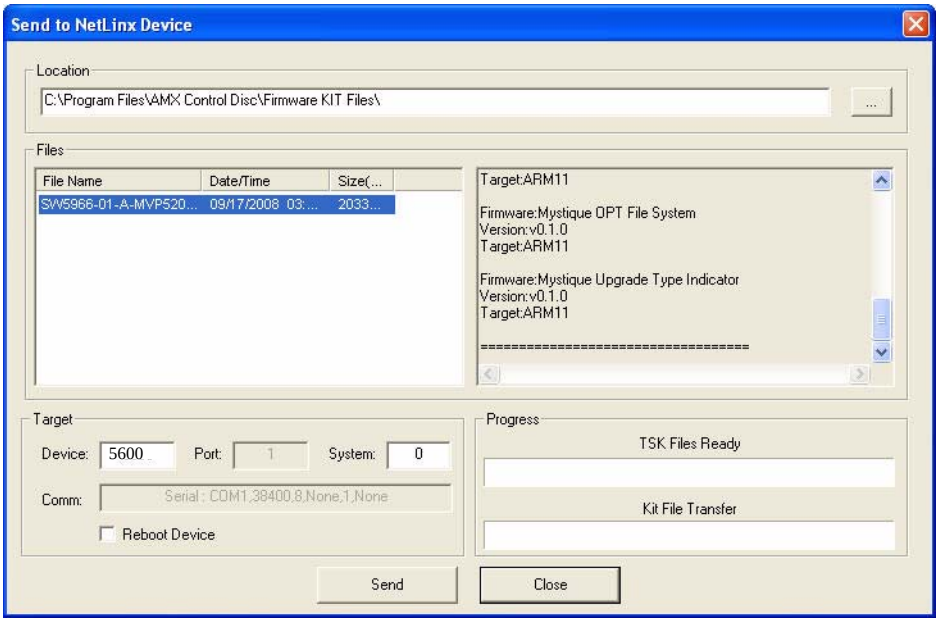


FIG. 61 Send To NetLinx Device dialog (NetLinx Studio)

3. Select the appropriate *.KIT file from the *Files* list.

NOTE

Always update DVX-2100HD devices in the following order:

- Device 0 (NetLinx Master
- Device 5001 (Integrated Control Ports)
- Device 5002 (A/V Switcher)
- Device 5003 (connected RX02N)

4. Enter the Device ID number of the integrated device to be upgraded in the **Device** text box and the System ID numbers for the DVX-2100HD in the **System** text box.

- The device number of the NetLinx Master is **0**.
- By default, the Device number assigned to the integrated control ports is **5001**.
- By default, the Device Number assigned to the integrated A/V switcher is **5002**.
- Use the Online Device Tree to determine the device's assigned IDs, if it has been changed.

5. Review the File, Connection, Address, and Target Device information before you send.

6. Click the **Send** button. You can watch the progress of the transfer in the *Send to NetLinx Device* dialog.

NetLinx Studio transfers the files to the DVX-2100HD and then tells it to reboot. After it reboots, the DVX-2100HD actually goes through the upgrade process.

- During the upgrade process, the Status LED blinks, and the DVX-2100HD stays offline.
- Once the upgrade is complete, the LED will stop blinking and the DVX-2100HD will be online.
- Repeat the firmware update process for the next device until all devices are updated.

NOTE

Upgrading the Master or device firmware can take several minutes. If you are unsure of the progress of the upgrade, you can see the status of the upgrade on the LCD display on the front panel of the presentation switcher.

WARNING

If for any reason your Kit file transfer should fail, continue to retry the transfer until you are successful. DO NOT reboot the DVX-2100HD, or change connections until the transfer is complete. Failure to complete this operation successfully may require a factory repair of the DVX-2100HD.

Additional Documentation

For additional information on using NetLinx Studio, refer to the NetLinx Studio online help and Operation/Reference Guide (available at www.amx.com).

AMXmeetingroom

The DVX-2100HD presentation switcher supports AMXmeetingroom. AMXmeetingroom (**FG3011-01**) is a software application available for purchase separately which allows for a more simplified configuration of your system by using a touch panel connected to a video output on the rear panel of the presentation switcher. AMXmeetingroom contains an easy-to-use Configuration Wizard which enables you to supply information about your system and its connections while AMXmeetingroom uses the information provided to create an interface you can use to select devices and change settings. The AMXmeetingroom license is locked to the presentation switcher, and it cannot be moved to another master.

AMXmeetingroom enables you to configure audio/video inputs and outputs, and switch between sources by using a product-specific configuration web page served by the NetLinx Master web server. This page enables you to perform the following:

- Select the input format type for each video input
- Select the output format type, resolution, and refresh rate for the video output
- Select which video input is routed to the video output
- Set the input gain and attenuation for each audio input
- Set the maximum output level for the audio output
- Adjust the volume, bass, mid-range, and treble
- Select which audio input is routed to the audio output

AMXmeetingroom is delivered in a NetLinx token file (.TKN) and a password protected TPDesign4 touch panel file (.TP4), both of which are downloadable from www.amx.com.

Make sure to select the appropriate panel resolution for your specific touch panel.

Communications

- **Touch Panel ("Panel") and Master** – The NetLinx panel and master should be connected such that they can communicate together.
  Please refer to the NetLinx Studio online help or Operation/Reference Guide for additional details regarding setting up the NetLinx master and touch panel.
- **Panel** – The touch panel must be set to device ID **10001**.
- **NI Controller** – The NetLinx controller must be set to device ID **5001**. The system number of the master may be set as desired.

Load Master/Panel

- Once the TKN and TP4 files have been downloaded from www.amx.com, you can load the files from NetLinx Studio. Select File Transfer from the Tools menu, click Add, and select the "Other" tab. Here you will select the appropriate file types and browse to the AMXmeetingroom file locations.
- Make sure to set the appropriate communications settings in Studio.
- Follow the normal load process to send the files to the associated master and panel, setting the proper device, port, and system
  numbers.
- If the Master and Panel are communicating properly, the
  AMXmeetingroom application will begin on the License Key page.
- You are ready to begin configuring your system.

License Key/Demo Mode

The system will run in one of two modes – *Activated* or *Demo Mode*:

- *Activated* mode runs once a license key has been purchased (FG3011-01) and has been entered into the touch panel.
- The system will also run in *Demo Mode* without entering a license key.

  To enter Demo Mode: Press **Activate**, and select **Demo Mode**.
  Demo Mode allows for full use of the system for 14 days, with the '*Demo Mode*' watermark on the user pages.

Product Summary

The AMXmeetingroom product summary is available at: *http://www.amx.com/products/amxmeetingroom.asp*.

Web Assistant

Use the AMXmeetingroom Web Assistant to determine whether AMXmeetingroom is a match for your project specifications located at *http://www.amx.com/meetingroom/webAssistant/*

Training

Learn important installation, configuration and programming techniques in the AMX University course Getting Started with AMXmeetingroom (available online at *www.amx.com/training*).

Programming

The chapter defines all programming commands available for the DVX-2100HD.

NetLinx Commands

The following sections define the NetLinx channels, levels, and commands available for the DVX-2100HD:

NetLinx Channels

NetLinx Channels	
Channel	*Function*
24	Ramping Channel: Volume is ramped up while channel is active
25	Ramping Channel: Volume is ramped down while channel is active
26	Momentary Function Channel: Cycle volume mute when channel is activated
50	UTP Wallplate Channel: Buttonpress indication
140	Ramping Channel: Gain is ramped up while channel is active
141	Ramping Channel: Gain is ramped down while channel is active
143	Discrete Function Channel: Gain mute is on while channel is active
144	Momentary Function Channel: Cycle gain mute when channel is activated
199	Discrete Function Channel: Volume mute is on while channel is active
211	Video Mute is ON/ENABLED when channel is activated

NetLinx Levels

NetLinx Levels	
Level	*Function*
1	Output volume, range is 0-255
5	Audio gain, range is 0-255
8	RJ-45 cable gain, range is 0-255
9	RJ-45 cable comp, range is 0-255
10	Video Input Brightness, range is 0-255
11	Video Input Saturation, range is 0-255
12	Video Input Contrast, range is 0-255
13	Reserved
14	Video Input Hue, range is 0-255
20	Audio Mic PreAmp, range is 0-255
21	Audio Mic Band1(Bass), range is 0-255
22	Audio Mic Band2(Treble), range is 0-255
23	Reserved
24	Reserved
25	Reserved
26	Reserved
27	Reserved
31	Audio Output Equalizer Band1, range is 0-255
32	Audio Output Equalizer Band2, range is 0-255
33	Audio Output Equalizer Band3, range is 0-255
34	Audio Output Equalizer Band4, range is 0-255
35	Audio Output Equalizer Band5, range is 0-255
36	Audio Output Equalizer Band6, range is 0-255
37	Audio Output Equalizer Band7, range is 0-255
38	Reserved
39	Reserved
40	Reserved
41	Audio Input Mixer Level, range is 0-255
42	Mic #1 Input Mixer Level, range is 0-255
43	Mic #2 Input Mixer Level, range is 0-255

NetLinx Protocol

Please consult the WebConsole & Programming Guide for NetLinx Integrated Controllers for more details on NetLinx controller commands.

SEND_COMMANDS

The commands listed in the following sections are for the switcher only. For generic NetLinx commands, see the *NetLinx Integrated Controllers WebConsole and Programming Guide*.

- The commands derive their input/output port addressing from the target D:P:S.
- INPUT ports range from 1-8 for Audio and from 1-6 for Video.
- The extra ports 7 and 8 on the Audio subsystem represent MIC1 and MIC2 respectively.
- Ports 5 and 6 are UTP inputs. Audio and Video functionalities are disambiguated from the overlapped port numbers by combining them with the command name.
- There are two Audio output ports (05002:1:0 and 05002:2:0).
- Audio Output Port #1 is the Main Amp Output and most audio commands are addressed to this port.
- Audio Output Port #2 is the Line Output and normally tracks the Main Amp Output port with small exceptions (For example, the AUDOUT_VARIABLE command.)
- There are two Video output ports (05002:1:0 and 05002:2:0).
- Video Output Port #1 is the DVI/Main Video Output port.
- Video Output Port #2 is the RGB Output port.
- Input and Output functional distinctions are disambiguated from the overlapped port numbers by combining them with the command name.

The following table lists the port functionality mapping for the audio/video ports on the DVX-2100HD:

Port Functionality Mapping	
05002:1:0	AUDIO/VIDEO input #1, AUDIO/VIDEO output #1
05002:2:0	AUDIO/VIDEO input #2, AUDIO/VIDEO output #2
05002:3:0	AUDIO/VIDEO input #3
05002:4:0	AUDIO/VIDEO input #4
05002:5:0	AUDIO/VIDEO input #5
05002:6:0	AUDIO/VIDEO input #6
05002:7:0	AUDIO MIC #1 input
05002:8:0	AUDIO MIC #2 input
05002:9:0	MACRO button/channel input

AUDIO SEND_COMMANDs

The following table lists the audio SEND_COMMANDs available for the DVX-2100HD:

Audio SEND_COMMANDs	

AI<input>O<output>
Switches audio input port to audio output port
	Switch input to one or more outputs for switcher level Audio. Use <input> 0 for disconnect.
	Syntax:
	`SEND_COMMAND "'AI<input>O<output>'"`
	Variables:
	input = The source audio input number.
	output = The audio output port number to switch to. Restricted to a value of 1.
	Example:
	`SEND_COMMAND SWITCHER,"'AI2O1'"`
	Switch audio input port #2 to audio output #1.

?AUDIN_NAME
Requests the name of the input port.
	Queries the input name of the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDIN_NAME'"`
	Example:
	`SEND_COMMAND AUDIO_INPUT_1,"'?AUDIN_NAME'"`
	Returns a COMMAND string of the form: AUDIN_NAME-<name>.

AUDIN_NAME
Sets the input name of the audio port.
	Sets the input name of the audio port addressed by the D:P:S to <name>.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDIN_NAME <name>'"`
	Variables:
	name = A string name. For example: "PC 1"
	Example:
	`SEND_COMMAND AUDIO_INPUT_1,"'AUDIN_NAME MyPC'"`
	Sets the name of audio input port (#1 based on D:P:S) to MyPC.

?AUDIN_STEREO
Requests the stereo setting of the input port.
	Queries to see if the audio port addressed by the D:P:S has the stereo setting enabled or disabled.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDIN_STEREO'"`
	Example:
	`SEND_COMMAND AUDIO_INPUT_1,"'?AUDIN_STEREO'"`
	Returns a COMMAND string of the form: AUDIN_STEREO-<ENABLED|DISABLED>.

AUDIN_STEREO
Sets the stereo setting on the input port.
	Enables or disables the stereo setting on the audio port addressed by the D:P:S. If enabled, the stereo setting is on. If disabled, then the stereo setting is off, which means it is mono.
	Syntax:
	`SEND_COMMAND <DEV>,"'AUDIN_STEREO-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND AUDIO_INPUT_1,"'AUDIN_STEREO-ENABLE'"`

Audio SEND_COMMANDs (Cont.)	

?AUDIO_MUTE
Requests audio mute status.
	Request the device if all audio output is muted. Device responds with "'AUDIO_MUTE-<setting>'" where setting is "ENABLED" or "DISABLED".
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDIO_MUTE'"`
	Example:
	`SEND_COMMAND dxDev, "'?AUDIO_MUTE'"`
	Returns a COMMAND string of the form: AUDIO_MUTE-<ENABLED|DISABLED>.

AUDIO_MUTE
Sets audio muting.
	Enable or disable audio muting on all ports.
	Syntax:
	`SEND_COMMAND <DEV>,"'AUDIO_MUTE <setting>'"`
	Variables:
	setting = desired mute state, either "ENABLED" or "DISABLED"
	Example:
	`SEND_COMMAND dxDev,"'AUDIO_MUTE ENABLED'"`

?AUDMIC_GAIN
Requests the input gain setting on the microphone.
	Queries the input gain of the microphone addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_GAIN'"`
	Example:
	`SEND_COMMAND MIC_1,"'?AUDMIC_GAIN'"`
	Returns a COMMAND string of the form: AUDMIC_GAIN-<value>.

AUDMIC_GAIN
Sets the input gain on the microphone.
	Sets the input gain of the microphone addressed by the D:P:S to <value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_GAIN <value>'"`
	Variables:
	value = -24-24. The units are in dB
	Example:
	`SEND_COMMAND MIC_1,"'AUDMIC_GAIN 10'"`
	Sets the input gain of microphone #1 (based on D:P:S, where P=7) to 10.

?AUDMIC_LIMITER
Requests whether the limiter function is enabled on the microphone.
	Queries to see if the microphone addressed by the D:P:S has the Limiter functionality turned on.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_LIMITER'"`
	Example:
	`SEND_COMMAND MIC_1,"'?AUDMIC_LIMITER'"`
	Returns a COMMAND string of the form: AUDMIC_LIMITER-<ENABLED|DISABLED>

AUDMIC_LIMITER
Turns on or turns off the limiter function on the microphone.
	Enables or Disables whether the microphone addressed by D:P:S has the Limiter functionality turned on.
	Syntax:
	`SEND_COMMAND <DEV>,"'AUDMIC_LIMITER-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND MIC_1,"'AUDMIC_LIMITER-ENABLE'"`

Audio SEND_COMMANDs (Cont.)	

?AUDMIC_ON
Requests the status of the microphone.
	Queries to see if the microphone addressed by the D:P:S is on.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_ON'"`
	Example:
	`SEND_COMMAND MIC_1,"'?AUDMIC_ON'"`
	Returns a COMMAND string of the form: AUDMIC_ON-<ENABLED|DISABLED>.

AUDMIC_ON
Turns on or turns off the microphone.
	Enables or disables whether the microphone addressed by D:P:S is on.
	Syntax:
	`SEND_COMMAND <DEV>,"'AUDMIC_ON-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND MIC_1,"'AUDMIC_ON-ENABLE'"`

?AUDMIC_PREAMP_GAIN
Requests the pre-amplifier gain setting on the microphone.
	Queries the pre-amplifier gain of the microphone addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_PREAMP_GAIN'"`
	Example:
	`SEND_COMMAND MIC_1,"'?AUDMIC_PREAMP_GAIN'"`
	Returns a COMMAND string of the form: AUDMIC_PREAMP_GAIN-<value>.

AUDMIC_PREAMP_GAIN
Sets the pre-amplifier gain on the microphone.
	Sets the pre-amplifier gain of the microphone addressed by the D:P:S to <value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_PREAMP_GAIN <value>'"`
	Variables:
	value = 0-63. The units are in dB
	Example:
	`SEND_COMMAND MIC_1,"'AUDMIC_PREAMP_GAIN 50'"`
	Sets the pre-amplifier gain of microphone #1 (based on D:P:S, where P=7) to 50.

?AUDMIC_STEREO
Requests the status of single stereo mode on the microphone.
	Queries to see if two MIC input channels are set in single stereo mode addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_STEREO'"`
	Example:
	`SEND_COMMAND <DEV>,"'?AUDMIC_STEREO'"`
	Returns a command in the form: AUDMIC_STEREO-<ENABLED|DISABLED>

AUDMIC_STEREO
Enables or disables single stereo mode
	Enable or disable single stereo mode in two MIC input channels
	Syntax:
	`SEND_COMMAND <DEV>,"'AUDMIC_STEREO-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND <DEV>,"'AUDMIC_STEREO-ENABLE'"`

?AUDOUT_STEREO
Request if audio amp output is in stereo
	Device responds with "'AUDOUTSTEREO-<setting>'" where setting is "ENABLED" or "DISABLED".
	Syntax:
	`SEND_COMMAND <device>, "'?AUDOUT_STEREO'"`
	Example:
	`SEND_COMMAND dxDev, "'?AUDOUT_STEREO'"`

Audio SEND_COMMANDs (Cont.)	

AUDOUT_STEREO
Enables or disables audio amp output in stereo
	Syntax:
	`SEND_COMMAND <device>, "'AUDOUT_STEREO-<setting>'"`
	Variables:
	setting = Stereo setting, either "ENABLED" or "DISABLED"
	Example:
	`SEND_COMMAND dxDev,"'AUDOUT_STEREO-ENABLED'"`

?AUDOUT_UDM Queries to which audio output the UDM audio output is linked.	Syntax: `SEND_COMMAND <DEV>, "'?AUDOUT_UDM'"` Example: `SEND_COMMAND <DEV>, "'?AUDOUT_UDM'"` Returns a COMMAND string of the form: AUDOUT_UDM-<value>, in which value is the audio output the UDM is linked to. (1: Audio AMP output, 2: Audio Line output)

AUDOUT_UDM
Sets the UDM audio output linked with which audio output
	The UDM is addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_UDM-<VALUE>'"`
	Variable
	value = 1: Audio AMP output, 2: Audio Line output
	Example:
	`SEND_COMMAND <DEV>, "'AUDOUT_UDM-1'"`

?AUDOUT_VARIABLE
Requests the variable setting on the audio port.
	Queries to see if the audio port addressed by the D:P:S has the variable setting enabled or disabled.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDOUT_VARIABLE'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_2,"'?AUDOUT_VARIABLE'"`
	Returns a command in the form: AUDOUT_VARIABLE-<ENABLED|DISABLED>.

AUDOUT_VARIABLE
Enables or disables the variable setting on the audio port.
	Enables or disables the Variable setting on the audio port addressed by the D:P:S. If enabled, the variable setting is on. If disabled, the variable setting is off, which means it is fixed. This command is used on the audio Line Output port (#2) to indicate if the Line Output is supposed to vary with the Amp Output (in which case Variable=enabled) or if Line Output is fixed with respect to Amp Output (in which case Variable=disabled, i.e. Fixed=enabled).
	Syntax:
	`SEND_COMMAND <DEV>,"'AUDOUT_VARIABLE-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_2,"'AUDOUT_VARIABLE-ENABLE'"`

?EQUALIZER
Requests the equalizer band on the audio output port.
	Queries the equalizer setting of band <band> on the output audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?EQUALIZER-<band>'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1,"'?EQUALIZER-1'"`
	Returns a COMMAND string of the form: EQUALIZER-<band>=<value>.

Audio SEND_COMMANDs (Cont.)	

EQUALIZER
Sets the equalizer band on the audio output port.
	Sets the equalizer band <band> on the output audio port addressed by the D:P:S to <value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'EQUALIZER-<band>=<value>'"`
	Variables:
	band = 1..7 if on the audio output port.
	value = -20..20. The units are in dB.
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1,"'EQUALIZER-1=8'"`
	Sets band #1 of audio port equalizer to 8.

?GAIN
Query an audio port input gain.
	The device responds with "'GAIN-<value>'", where value is the input gain for the audio port.
	Syntax:
	`SEND_COMMAND <DEV>, "'?GAIN'"`
	Example:
	`SEND_COMMAND dxDev, "'?GAIN'"`

GAIN
Set an audio port input gain.
	Syntax:
	`SEND_COMMAND <DEV>, "'GAIN <value>'"`
	Variables:
	value = gain value to set. Gain values must be in the range of -24 to 24.
	Example:
	`SEND_COMMAND dxDev, "'GAIN 10'"`

?INPUTEQ
Requests the equalizer setting of the band on the audio input port.
	Queries the equalizer setting of band <band> on the input audio port addressed by the D:P:S. Currently, only supported for the MIC1 and MIC2 inputs.
	Syntax:
	`SEND_COMMAND <DEV>, "'?INPUTEQ-<band>'"`
	Example:
	`SEND_COMMAND MIC_1,"'?INPUTEQ-1'"`
	Returns a COMMAND string of the form: INPUTEQ-<band>=<value>.

INPUTEQ
Sets the equalizer setting of the band on the audio input port.
	Sets the equalizer band <band> on the input audio port addressed by the D:P:S to <value>. Currently, only supported for the MIC1 and MIC2 inputs.
	Syntax:
	`SEND_COMMAND <DEV>, "'INPUTEQ-<band>=<value>'"`
	Variables:
	band = 1..2 on the microphone inputs.
	value = -20..20. The units are in dB.
	Example:
	`SEND_COMMAND MIC_1,"'INPUTEQ-1=8'"`
	Sets band #1 of input audio port equalizer to 8.

?PHANTOM_PWR
Requests the phantom power status on the microphone.
	Queries to see if the microphone addressed by the D:P:S is being provided phantom power.
	Syntax:
	`SEND_COMMAND <DEV>, "'?PHANTOM_PWR'"`
	Example:
	`SEND_COMMAND MIC_1,"'?PHANTOM_PWR'"`
	Returns a COMMAND string of the form: PHANTOM_PWR-<ENABLED|DISABLED>.

Audio SEND_COMMANDs (Cont.)	

PHANTOM_PWR
Sets the phantom power status on the microphone.
	Enables or Disables whether the microphone addressed by D:P:S should be provided phantom power.
	Syntax:
	`SEND_COMMAND <DEV>,"'PHANTOM_PWR-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND MIC_1,"'PHANTOM_PWR-ENABLE'"`

?VOLUME
Request an audio output port volume.
	Device responds with "'VOLUME-<value>'" where value is the numerical volume setting.
	Syntax:
	`SEND_COMMAND <DEVICE>,"'?VOLUME'"`
	Example:
	`SEND_COMMAND dxDev,"'?VOLUME'"`

VOLUME
Set an audio output port volume.
	Syntax:
	`SEND_COMMAND <DEV>,"'VOLUME <value>'"`
	Variables:
	value = desired audio decibel volume. For the Amp Out port (port 1), enter a value in the range of 0-100. For the Line Out port (port 2), use any value in the range of -20 to 20db.
	Example:
	`SEND_COMMAND dxDev,"'VOLUME 15'"`

?XPOINT
Requests the mix level of the input port.
	Queries the mix level contribution of the audio input port addressed by <input> to the audio output mixer addressed by <output>.
	Syntax:
	`SEND_COMMAND <DEV>, "'?XPOINT-<input>,<output>'"`
	Variables:
	input = 1..8 ### 1..6 for the regular audio inputs and 7..8 for the MICs.
	output = 1..2 ### 1 is for the AMP output, 2 is for the LINEOUT output.
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_2,"'?XPOINT-3,2'"`
	Returns a COMMAND string of the form: XPOINT-<value>,<input>,<output>

XPOINT
Sets the mix level of the audio input.
	Sets the mix level that the audio input addressed by the parameter <input> provides to the audio output <output> to <value>.
	***Note**: Audio input ports 1..6 share a setting across them for a specific output mixer's value.*
	Syntax:
	`SEND_COMMAND <DEV>, "'XPOINT-<value>,<input>,<output>'"`
	Variables:
	value = 0..100
	input = 1..8 ### 1..6 for the regular audio inputs and 7..8 for the MICs.
	output = 1..2 ### 1 is for the AMP output, 2 is for the LINEOUT output.
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_2,"'XPOINT-75,3,2'"`
	Sets the mix level of audio input 3's contribution to the audio LINEOUT (2) output to 75.

Video SEND_COMMANDs

The following table lists the video SEND_COMMANDs available for the DVX-2100HD:

Video SEND_COMMANDs	

CI<input>O<output>
Switches both the audio and video input port to the output port
	Switches both the audio and video input to the output port. Since there is only one audio output port but there are two video output ports, the audio will always be switched to the single audio output port regardless of what is specified for the <output> port in the command. The "O<output>" portion is only inspected for video outbound port switching.
	Syntax:
	`SEND_COMMAND <DEV>, "'CI<input>O<output>'"`
	Variables:
	input = The source input port number.
	output = The output port number to switch to.
	Examples:
	`SEND_COMMAND SWITCHER,"'CI2O1'"`
	Switch (audio/video) input port #2 to output #1.
	`SEND_COMMAND SWITCHER,"'CI4O2'"`
	Switch video input port #4 to video output #2. Also switches audio input port #4 to the single audio output port.
	`SEND_COMMAND SWITCHER,"'CI3O1,2'"`
	Switches video input port #3 to output video ports #1 and #2. Switches audio input port #3 to audio output port #1. Since audio has only one output port, the multiple output port specification is ignored.

CL
Switches the audio or video (or both) inputs to the output port.
	Switches the audio or video (or both) inputs to the output port. Since there is only one audio output port but there are two video output ports, the audio will always be switched to the single audio output port regardless of what is specified for the <output> port in the command for the <sl>=ALL and <sl>=AUDIO variants. The "O<output>" portion is only inspected for video outbound port switching.
	Syntax:
	`SEND_COMMAND <DEV>, "'CL<sl>I<input>O<output>'"`
	Variables:
	sl = AUDIO or VIDEO or ALL. ALL = both AUDIO and VIDEO.
	input = The source input port number.
	output = The output port number to switch to.
	Examples:
	`SEND_COMMAND SWITCHER,"'CLALLI2O1'"`
	Switch audio and video inputs (port #2) to output #1.
	`SEND_COMMAND SWITCHER,"'CLVIDEOI3O1,2'"`
	Switch video input (port #3) to video output ports #1 and #2.
	`SEND_COMMAND SWITCHER,"'CLAUDIOI4O1'"`
	Switch audio input (port #4) to audio output port #1.
	`SEND_COMMAND SWITCHER,"'CLALLI1O1,2'"`
	Switches video input (port #1) to video output ports #1 and #2. Switches audio input (port #1) to audio output port #1. Since audio has only one output port, the multiple output port specification is ignored.

Video SEND_COMMANDs (Cont.)	

?INPUT
Queries for the input connected to an output.
	Normally, if the output port is not connected to any input port then the reply will indicate this with an input port number of ZERO (0). For the DVX products, at this time, the output parameter is ignored and assumed to be 1.
	Syntax:
	`SEND_COMMAND <DEV>, "'?INPUT-<sl>,<output>'"`
	Variables:
	sl = AUDIO or VIDEO.
	output = The output port number.
	Example:
	`SEND_COMMAND SWITCHER,"'?INPUT-AUDIO,1'"`
	Think of it as asking: Which audio input port is connected to output port #1? Returns a COMMAND string of the form: SWITCH-L<AUDIO|VIDEO>I<input>O<output>.

?OSD
Requests status of On-Screen Display (OSD) setting.
	Queries to see if the video port addressed by the D:P:S has the OSD setting enabled or disabled.
	Syntax:
	`SEND_COMMAND <DEV>, "'?OSD'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?OSD'"`
	Returns a COMMAND string of the form: OSD-<ENABLED|DISABLED>.

OSD
Sets the status of the OSD setting.
	Enables or Disables the On Screen Display (OSD) setting on the video port addressed by the D:P:S. If ENABLEd, then the OSD setting is on. If disabled, then the OSD setting is off.
	Syntax:
	`SEND_COMMAND <DEV>,"'OSD-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'OSD-ENABLE'"`

?OUTPUT
Queries for the outputs connected to an input.
	If the input port is not connected to any output port then the reply will indicate this with an output port number of ZERO (0).
	Syntax:
	`SEND_COMMAND <DEV>, "'?OUTPUT-<sl>,<input>'"`
	Variables:
	sl = AUDIO, VIDEO, or ALL. ALL = both AUDIO -and- VIDEO.
	input = The source input port number.
	Example:
	`SEND_COMMAND SWITCHER,"'?OUTPUT-AUDIO,1'"`
	Think of it as asking: Which audio output ports are connected to input port #1? Returns a COMMAND string of the form: SWITCH-L<AUDIO|VIDEO>I<input>O<output>.

?VIDEO_MUTE
Request if all-port video output is muted.
	Device responds with '"VIDEO_MUTE-<setting>"' where setting is "ENABLED" or "DISABLED".
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDEO_MUTE'"`
	Example:
	`SEND_COMMAND dxDev, "'?VIDEO_MUTE'"`

Video SEND_COMMANDs (Cont.)	

VIDEO_MUTE
Enable or disable video output display.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDEO_MUTE <setting>'"`
	Variables:
	setting = desired mute state, either "ENABLED" or "DISABLED"
	Example:
	`SEND_COMMAND dxDev,"'VIDEO_MUTE ENABLED'"`
	Returns a COMMAND string of the form: VIDEO_MUTE-<ENABLED|DISABLED>.

?VIDEO_TESTPATTERN
Requests the test pattern setting of the video port.
	Queries the test pattern setting.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDEO_TESTPATTERN'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDEO_TESTPATTERN'"`
	Returns a COMMAND string of the form: VIDEO_TESTPATTERN-<pattern>.

VIDEO_TESTPATTERN
Sets the test pattern on the video port.
	Sets the test pattern to display.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDEO_TESTPATTERN-<pattern>'"`
	Variables:
	pattern = NONE, Color Bar, Gray Ramp, SMPTE Bar, HiLoTrak, Pluge, Cross Hatch
	These are case sensitive.
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'VIDEO_TESTPATTERN-Cross Hatch'"`
	Sets the test pattern to display to 'Cross Hatch'.

?VIDIN_BRIGHTNESS
Requests the input brightness of the video port.
	Queries the input brightness of the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_BRIGHTNESS'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_BRIGHTNESS'"`
	Returns a COMMAND string of the form: VIDIN_BRIGHTNESS-<value>.

VIDIN_BRIGHTNESS
Sets the input brightness of the video port.
	Sets the input brightness of the video port addressed by the D:P:S to <value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDIN_BRIGHTNESS <value>'"`
	Variables:
	value = 0..100
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_BRIGHTNESS 50'"`
	Sets the brightness of video input port (#1 based on D:P:S) to 50.

?VIDIN_COLOR
Requests the status of the color setting on the video port.
	Queries to see if the video port addressed by the D:P:S has the COLOR setting enabled or disabled.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_COLOR'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?VIDIN_COLOR'"`
	Returns a COMMAND string of the form: VIDIN_COLOR-<ENABLED|DISABLED>

Video SEND_COMMANDs (Cont.)	

VIDIN_COLOR
Sets the color setting on the video port.
	Enables or Disables the COLOR setting on the video port addressed by the D:P:S. If enabled, then the COLOR setting is true. If disabled, then the COLOR setting is false which means it's Black & White instead.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDIN_COLOR <ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_COLOR ENABLE'"`

?VIDIN_CONTRAST
Requests the input contrast of the video port.
	Queries the input contrast of the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_CONTRAST'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_CONTRAST'"`
	Returns a COMMAND string of the form: VIDIN_CONTRAST-<value>.

VIDIN_CONTRAST
Sets the input contrast of the video port.
	Sets the input contrast of the video port addressed by the D:P:S to <value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDIN_CONTRAST <value>'"`
	Variables:
	value = 0..100
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_CONTRAST 50'"`
	Sets the contrast of video input port (#1 based on D:P:S) to 50.

?VIDIN_FORMAT
Requests the input format of the video port.
	Queries the input format of the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_FORMAT'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_FORMAT'"`
	Returns a COMMAND string of the form: VIDIN_FORMAT-<format>.

VIDIN_FORMAT
Sets the input format of the video port.
	Sets the input format of the video port addressed by the D:P:S to <format>.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDIN_FORMAT <format>'"`
	Variables:
	format = DVI, SVIDEO, COMPONENT, COMPOSITE, VGA
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_FORMAT COMPONENT'"`
	Sets the format of video input port (#1 based on D:P:S) to COMPONENT.

VIDIN_HSHIFT
Sets the horizontal shifting of the VGA video input port.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDIN_HSHIFT-<value>'"`
	Variables:
	value = -127..127
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_HSHIFT-5'"`
	Sets the horizontal shift of video input port (#1 based on D:P:S) to 5.

Video SEND_COMMANDs (Cont.)	

?VIDIN_HUE
Requests the input hue of the video port.
	Queries the input hue of the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_HUE'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_HUE'"`
	Returns a COMMAND string of the form: VIDIN_HUE-<value>.

VIDIN_HUE
Sets the input hue of the video port.
	Sets the input hue of the video port addressed by the D:P:S to <value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDIN_HUE <value>'"`
	Variables:
	value = 0..100
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_HUE 50'"`
	Sets the hue of video input port (#1 based on D:P:S) to 50.

?VIDIN_NAME
Requests the name of the video input.
	Queries the input name of the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_NAME'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_NAME'"`
	Returns a COMMAND string of the form: VIDIN_NAME-<name>.

VIDIN_NAME
Sets the input name of the video port.
	Sets the input name of the video port addressed by the D:P:S to <name>.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDIN_NAME <name>'"`
	Variables:
	name = A string name. E.g.: "PC 1"
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_NAME MyPC'"`
	Sets the name of video input port (#1 based on D:P:S) to MyPC. This is used for the On Screen Display feature.

?VIDIN_PHASE
Requests the input phase of the video port.
	Queries the input phase of the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_PHASE'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_PHASE'"`
	Returns a COMMAND string of the form: VIDIN_PHASE-<value>.

VIDIN_PHASE
Sets the input phase of the video port.
	Sets the input phase of the video port addressed by the D:P:S to <value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDIN_PHASE-<value>'"`
	Variables:
	value = 0..32
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_PHASE-23'"`
	Sets the phase of video input port (#1 based on D:P:S) to 23.

Video SEND_COMMANDs (Cont.)	

?VIDIN_RES_AUTO
Requests the status of the auto resolution setting on the video input port.
	Queries to see if the video input port addressed by the D:P:S has its auto resolution setting enabled or disabled.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_RES_AUTO'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_RES_AUTO'"`
	Returns a COMMAND string of the form: VIDIN_RES_AUTO-<ENABLED|DISABLED>.

VIDIN_RES_AUTO
Sets the status of the auto resolution setting on the video input port.
	Enables or disables whether the video input port addressed by D:P:S is supposed to have its resolution auto detected.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDIN_RES_AUTO-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_RES_AUTO-ENABLE'"`

?VIDIN_RES_REF
Requests the resolution of the video input port.
	Queries to resolution of the video input port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_RES_REF'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_RES_REF'"`
	Returns a COMMAND string of the form: VIDIN_RES_REF-<h>x<v>,<rate>.

VIDIN_RES_REF
Sets the resolution and refresh rate of the video input port.
	Sets the resolution and refresh rate of the video input port addressed by D:P:S. Invalid combinations are ignored by the SWITCHER.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDIN_RES_REF <horizontal>x<vertical>,<refresh-rate>'"`
	Variables:
	horizontal = An integer value representing the horizontal.
	vertical = An integer value representing the vertical. May have an additional qualifier such as 'i' or 'p'.
	refresh-rate = An integer value representing the refresh rate.
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_RES_REF 1440x480i,59'"`

?VIDIN_SATURATION
Requests the saturation level of the video input port.
	Queries the input saturation of the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_SATURATION'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_SATURATION'"`
	Returns a COMMAND string of the form: VIDIN_SATURATION-<value>.

VIDIN_SATURATION
Sets the saturation level of the video input port.
	Sets the input saturation of the video port addressed by the D:P:S to <value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDIN_SATURATION-<value>'"`
	Variables:
	value = 0..100
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_SATURATION-50'"`
	Sets the saturation of video input port (#1 based on D:P:S) to 50.

Video SEND_COMMANDs (Cont.)	

?VIDIN_STATUS
Requests the video input status of the video input port.
	Queries the video input status of the video input port addressed by the D:P:S
	Syntax:
	`SEND_COMMAND <DEV>,"'?VIDIN_STATUS'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_STATUS'"`
	Returns a COMMAND string of the form: VIDIN_STATUS-<status string>. status string returns NOT ACTIVE, NO SIGNAL, UNKNOWN SIGNAL, or VALID SIGNAL.

?VIDOUT_ASPECT_RATIO
Requests the aspect ratio of the video output port.
	Queries the aspect ratio of the video output port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_ASPECT_RATIO'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDOUT_ASPECT_RATIO'"`
	Returns a COMMAND string of the form: VIDOUT_ASPECT_RATIO-<ratio>.

VIDOUT_ASPECT_RATIO
Sets the aspect ratio of the video output port.
	Sets the aspect ratio of the video output port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDOUT_ASPECT_RATIO-<ratio>'"`
	Variables:
	ratio = Full, Stretch, Zoom, Anamorphic
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'VIDOUT_ASPECT_RATIO-Full'"`

?VIDOUT_RES
Requests the resolution of the video output port.
	Queries to resolution of the video output port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_RES'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDOUT_RES'"`
	Returns a COMMAND string of the form: VIDOUT_RES-<h>x<v>,<rate>.

?VIDOUT_RES_AUTO
Requests the status of the auto resolution of the video output port.
	Queries to see if the video output port addressed by the D:P:S has its auto resolution setting enabled or disabled.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_RES_AUTO'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDOUT_RES_AUTO'"`
	Returns a COMMAND string of the form: VIDOUT_RES_AUTO-<ENABLED|DISABLED>.

VIDOUT_RES_AUTO
Sets the status of the auto resolution setting on the video output port.
	Enables or disables whether the video output port addressed by D:P:S is supposed to have its resolution auto detected.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDOUT_RES_AUTO-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'VIDOUT_RES_AUTO-ENABLE'"`

Audio SEND_COMMANDs (Cont.)	

?VIDOUT_RES_REF
Requests the resolution and refresh rate of the video output port.
	Queries the resolution and refresh rate of the video output port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_RES_REF'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDOUT_RES_REF'"`
	Returns a COMMAND string of the form: VIDOUT_RES_REF-<h>x<v>,<rate>.

VIDOUT_RES_REF
Sets the resolution and refresh rate of the video output port.
	Sets the resolution and refresh rate of the video output port addressed by D:P:S. Invalid combinations are ignored by the presentation switcher.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDOUT_RES_REF-<horizontal>x<vertical>,<refresh-rate>'"`
	Variables:
	horizontal = An integer value representing the horizontal.
	vertical = An integer value representing the vertical.
	May have an additional qualifier such as 'i' or 'p'.
	refresh-rate = An integer value representing the refresh rate.
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'VIDOUT_RES_REF-1280x1024,60'"`

VI<input>O<output>
Switches video input port to video output port
	Switch input to one or more outputs for switcher level Video. Set <input> to 0 for disconnect.
	Syntax:
	`SEND_COMMAND <DEV>, "'VI<input>O<output>'"`
	Variables:
	input = The source video input port number.
	output = The video output port number to switch to. Restricted to the values of 1 or 2.
	Example:
	`SEND_COMMAND SWITCHER,"'VI2O1'"`
	Switch video input port #2 to video output #1.
	`SEND_COMMAND SWITCHER,"'VI3O1,2'"`
	Switch video input port #3 to video output ports #1 (DVI) and #2 (RGB).

Front Panel SEND_COMMANDs

The following table lists the front panel SEND_COMMANDs available for the DVX-2100HD:

Front Panel SEND_COMMANDs	

COLOR
Set the color of a front panel LED macro button.
	Syntax:
	`SEND_COMMAND <DEV>,"'COLOR <button> <color>'"`
	Variables:
	button = Index of the button to color. Must be in the range of 1 to 4.
	color = Color to assign to the button. Valid options are WHITE, CYAN, YELLOW, GREEN, MAGENTA, BLUE, RED, and OFF.
	Example:
	`SEND_COMMAND dxDev, "'COLOR 2 BLUE'"`

?FP_LOCKOUT
Requests the status of the front panel lockout.
	Queries to see if the Front Panel is locked out.
	Syntax:
	`SEND_COMMAND <DEV>, "'?FP_LOCKOUT'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?FP_LOCKOUT'"`
	Returns a COMMAND string of the form: FP_LOCKOUT-<ENABLED|DISABLED>.

FP_LOCKOUT
Sets the front panel lockout.
	Enables or Disables whether the Front Panel is supposed to be locked out.
	Syntax:
	`SEND_COMMAND <DEV>,"'FP_LOCKOUT-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND SWITCHER,"'FP_LOCKOUT-ENABLE'"`

?FP_LOCKTYPE
Requests the type of lockout set for the front panel.
	Syntax:
	`SEND_COMMAND <DEV>, "'?FP_LOCKTYPE'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?FP_LOCKTYPE'"`
	Returns a COMMAND string of the form: FP_LOCKTYPE-<Value>.
	Value = 1: lock out all menus; 2:reserved; 3:lockout configure menu only

FP_LOCKTYPE
Sets the lockout type for front panel.
	Syntax:
	`SEND_COMMAND <DEV>, "'FP_LOCKTYPE-<value>'"`
	Variable:
	value = 1: lock out all menus; 2:reserved; 3:lockout configure menu only
	Example:
	`SEND_COMMAND SWITCHER,"FP_LOCKTYPE-1'"`

?INTENSITY_LCD
Query LCD display light intensity
	Queries the intensity setting of the LCD screen on the Front Panel.
	Syntax:
	`SEND_COMMAND <DEV>, "'?INTENSITY_LCD'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?INTENSITY_LCD'"`
	Returns a COMMAND string of the form: INTENSITY_LCD-<value>.

Front Panel SEND_COMMANDs (Cont.)	

INTENSITY_LCD
Sets the LCD display light intensity
	Sets the intensity of the lighting/brightness of the LCD screen that is part of the Front Panel.
	Syntax:
	`SEND_COMMAND <DEV>, "'INTENSITY_LCD-<intensity-value>'"`
	Variables:
	intensity-value = An integer value in the range of 0-100 with 0 being no illumination and 100 being maximum illumination.
	Example:
	`SEND_COMMAND SWITCHER,"'INTENSITY_LCD-50'"`
	Sets the intensity of the LCD screen on the Front Panel to 50.

?INTENSITY_LEDS
Query front panel light intensity.
	Queries the intensity setting of the LED buttons on the Front Panel.
	Syntax:
	`SEND_COMMAND <DEV>, "'?INTENSITY_LEDS'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?INTENSITY_LEDS'"`
	Returns a COMMAND string of the form: INTENSITY_LEDS-<value>.

INTENSITY_LEDS
Sets the front panel light intensity
	Sets the intensity of the lighting/brightness of the LED buttons that are part of the Front Panel.
	Syntax:
	`SEND_COMMAND <DEV>, "'INTENSITY_LEDS-<intensity-value>'"`
	Variables:
	intensity-value = An integer value in the range of 0-100 with 0 being no illumination and 100 being maximum illumination.
	Example:
	`SEND_COMMAND SWITCHER,"'INTENSITY_LEDS-50'"`
	Sets the intensity of the LED buttons on the Front Panel to 50.

System SEND_COMMANDs

The following table lists the System SEND_COMMANDs available for the DVX-2100HD:

Front Panel SEND_COMMANDs	

?DSP_FWVERSION
Requests the audio DSP firmware version.
	Queries the version of the audio DSP firmware of the switcher.
	Syntax:
	`SEND_COMMAND <DEV>, "'?DSP_FWVERSION'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?DSP_FWVERSION'"`
	Returns a COMMAND string of the form: DSP_FWVERSION-<version>.

?FGPA_FWVERSION
Requests the video FPGA firmware version.
	Queries the version of the video FPGA firmware of the switcher.
	Syntax:
	`SEND_COMMAND <DEV>, "'?FPGA_FWVERSION'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?FPGA_FWVERSION'"`
	Returns a COMMAND string of the form: FPGA_FWVERSION-<version>.

?FWVERSION
Query for the device firmware version.
	Syntax:
	`SEND_COMMAND <DEV>,"'?FWVERSION'"`
	Example:
	`SEND_COMMAND dvDev,"'?FWVERSION'"`
	Returns a COMMAND string of the form: FWVERSION-<version>.

UTP Input SEND_COMMANDs

The following table lists the UTP Input SEND_COMMANDs available for the DVX-2100HD:

UTP Input SEND_COMMANDs	

?SB
Requests the cable gain for video arriving over RJ45 cable.
	Queries the cable gain for video arriving over RJ45 to the DVX-2100HD.
	Syntax:
	`SEND_COMMAND <DEV>,?SB`
	Example:
	`SEND_COMMAND dvRX1,?SB`
	Device would respond with "SB-<value>" where value is the brightness level. For example, the device might respond with "SB-70".

SB
Sets the cable gain for video arriving over RJ45 cable.
	Sets the cable gain for video arriving over RJ45 to the DVX-2100HD.
	Syntax:
	`SEND_COMMAND <DEV>,"SB<B#>'"`
	Variables:
	B# = brightness (0-255 = brightness value)
	Example:
	`SEND_COMMAND dvRX1,"'SB46'"`
	Sets the brightness to 46 (about half way).

?SS
Requests the cable compensation for video arriving over RJ45 cable.
	Queries the cable compensation for video arriving over RJ45 to the DVX-2100HD-SP.
	Syntax:
	`SEND_COMMAND <DEV>,?SS`
	Example:
	`SEND_COMMAND dvRX1,?SS`
	Device would respond with "SS-<value>" where value is the compensation level. For example, device might respond with "SS-17".

SS
Sets the cable compensation for video arriving over RJ45 cable.
	Sets the cable compensation for video arriving over RJ45 to the DVX-2100HD-SP.
	Syntax:
	`SEND_COMMAND <DEV>,"SS<S#>'"`
	Variables:
	S# = sharpness (0-255 = sharpness value)
	Example:
	`SEND_COMMAND dvRX1,"'SS24'"`
	Sets the sharpness to 24.

?WPVIDEO
Request the video-type coming in from a wallplate.
	Syntax:
	`SEND_COMMAND <DEVICE>,?WPVIDEO`
	Example:
	`SEND_COMMAND dxDev,?WPVIDEO`
	Device responds with WPVIDEO-<videotype> where videotype is one of the following:
	Disconnected, Component, Composite, RGB
	For example, WPVIDEO-Component.

UDM-Connected Device NetLinx Commands

The following sections define the NetLinx channels, levels, and commands available for the UDM-RX02N. The UDM channels, UDM levels, and UDM commands are for RX02N port 1.

UDM Channels

UDM Channels	
Channel	*Function*
255	This channel on shows that the Rx has a valid Cat5 connection to the UDM hub. If channel is off, the Rx is not connected correctly.

UDM Levels

UDM Levels	
Level	*Function*
10	Brightness - controls the gain applied to the video signal to compensate for Cat5 cable losses - a value of 0 provides no additional gain, whereas a value of 90 compensates for around 300m cable
13	Sharpness - controls the high frequency boost applied to compensate for cable losses - a value of 0 provides no additional boost, whereas a value of 70 compensates for around 300m cable
15	Red skew - controls the delay added to a video signal to compensate for different pair lengths in the cable - a value of 0 applies no delay, whereas a value of 31 (maximum) applies 62nS delay
16	Green skew - controls the delay added to the green video signal
17	Blue skew - controls the delay added to the blue video signal

UDM Commands

UDM SEND_COMMANDs	

RP
Set protocol used by IR remote.
	The Rx can support a number of different remotes which are mapped through to button pushes.
	Syntax:
	`SEND_COMMAND <DEV>, "'RP<P#>'"`
	Variables:
	P# = "ENDELEO", "AMX", "SKY", "TIVO", "DIRECTV"
	Example:
	`SEND_COMMAND dvRX, "'RPAMX'"`
	Configures the Rx to use an AMX remote.

?RP
Query for the protocol used by the IR remote.
	The Rx can support a number of different remotes which are mapped through to button pushes.
	Syntax:
	`SEND_COMMAND <DEV>, "'?RP'"`
	Example:
	`SEND_COMMAND dvRX, "'RPAMX'"`
	Configures the Rx to use an AMX remote.

UDM SEND_COMMANDs (Cont.)	

?SB
Requests the brightness of the signals delivered to a connected display.
	Queries the brightness of the signals delivered to a connected display.
	Syntax:
	`SEND_COMMAND <DEV>,?SB`
	Example:
	`SEND_COMMAND dvRX1,?SB`
	Device would respond with "SB-<value>" where value is the brightness level. For example, the device might respond with "SB-70"

SB
Sets the brightness of the signals delivered to a connected display.
	Syntax:
	`SEND_COMMAND <DEV>,"SB<B#>'"`
	Variables:
	B# = brightness (0-255 = brightness value)
	Example:
	`SEND_COMMAND dvRX1,"'SB46'"`
	Sets the brightness to 46 (about half way).

SD
Set the brightness, sharpness, and skew.
	Sets the brightness, sharpness, and skew of the signals delivered to a connected display based on distance and cable type.
	Syntax:
	`SEND_COMMAND <DEV>,"SD<D#CC#>'"`
	Variables:
	D# = distance (0-255 = cable length in meters)
	C# = cable type, "CAT5", "CAT5e", "CAT6", "CAT7"
	Example:
	`SEND_COMMAND dvRX1,"'SD100CCAT5e'"`
	Sets the cable compensation for 100m of CAT5e cable.

?SKB
Requests the skew on the blue video channel.
	Syntax:
	`SEND_COMMAND <DEV>,?SKB`
	Example:
	`SEND_COMMAND dvRX1,?SKB`
	The device would respond with "SKB-<blueskew>". For example, the device might respond with "SKB-7".

SKB
Sets the skew on the blue video channel.
	Syntax:
	`SEND_COMMAND <DEV>,"SKB<B#>'"`
	Variables:
	B# = skew value (delay in 2nS intervals), 0-31 = skew value
	Example:
	`SEND_COMMAND dvRX1,"'SKB4'"`
	Sets the blue skew value to 4 (adds 8nS delay to blue video).

?SKG
Requests the skew on the green video channel.
	Syntax:
	`SEND_COMMAND <DEV>,?SKG`
	Example:
	`SEND_COMMAND dvRX1,?SKG`
	The device would respond with "SKG-<greenskew>". For example, the device might respond with "SKG-7".

UDM SEND_COMMANDs (Cont.)	

SKG
Sets the skew on the green video channel.
	Syntax:
	`SEND_COMMAND <DEV>,"SKG<G#>'"`
	Variables:
	G# = skew value (delay in 2nS intervals), 0-31 = skew value
	Example:
	`SEND_COMMAND dvRX1,"'SKG17'"`
	Sets the green skew value to 17 (adds 34nS delay to green video).

?SKR
Requests the skew on the red video channel.
	Syntax:
	`SEND_COMMAND <DEV>,?SKR`
	Example:
	`SEND_COMMAND dvRX1,?SKR`
	The device would respond with "SKR-<redskew>". For example, the device might respond with "SKR-7".

SKR
Sets the skew on the red video channel.
	Syntax:
	`SEND_COMMAND <DEV>,"SKR<R#>'"`
	Variables:
	R# = skew value (delay in 2nS intervals), 0-31 = skew value
	Example:
	`SEND_COMMAND dvRX1,"'SKR8'"`
	Sets the red skew value to 8 (adds 16nS delay to red video).

?SS
Requests the sharpness of the signals delivered to a connected display.
	Syntax:
	`SEND_COMMAND <DEV>,?SS`
	Example:
	`SEND_COMMAND dvRX1,?SS`
	Device would respond with "SS-<value>" where value is the compensation level. For example, device might respond with "SS-17".

SS
Sets the sharpness of the signals delivered to a connected display.
	Syntax:
	`SEND_COMMAND <DEV>,"SS<S#>'"`
	Variables:
	S# = sharpness (0-255 = sharpness value)
	Example:
	`SEND_COMMAND dvRX1,"'SS24'"`
	Sets the sharpness to 24.

IR SEND_COMMANDs

The IR Commands are for RX02N port 3. These commands are for the swticher only.

IR SEND_COMMANDs	

CAROFF
Disable the IR carrier signal
	Disable the IR carrier signal until a 'CARON' command is received.
	Syntax:
	`SEND_COMMAND <DEV>,"'CAROFF'"`
	Example:
	`SEND_COMMAND dvRXIR,"'CAROFF'"`
	Stops transmitting IR carrier signals to the IR port.

CARON
Enable IR carrier signals
	Enable the IR carrier signals (default).
	Syntax:
	`SEND_COMMAND <DEV>,"'CARON'"`
	Example:
	`SEND_COMMAND dvRXIR,"'CARON'"`
	Starts transmitting IR carrier signals to the IR port.

CH
Send IR pulses for the selected channel.
	All channels below 100 are transmitted as two digits. If the IR code for ENTER (function #21) is loaded, an Enter will follow the number. If the channel is greater than or equal to (>=) 100, then IR function 127 or 20 (whichever exists) is generated for the one hundred digit. Uses 'CTON' and 'CTOF' times for pulse times.
	Syntax:
	`SEND_COMMAND <DEV>,"'CH',<channel number>"`
	Variables:
	channel number = 0 - 199 channels
	Example:
	`SEND_COMMAND dvRXIR,"'CH',18"`
	The IR port on the UDM Rx performs the following:
	"Transmits IR signals for 1 (IR code 11).
	The transmit time is set with the CTON command.
	"Waits until the time set with the CTOF command elapses.
	"Transmits IR signals for 8 (IR code 18).
	"Waits for the time set with the CTOF command elapses.
	If the IR code for Enter (IR code 21) is programmed, the IRS4 performs the following steps.
	"Transmits IR signals for Enter (IR code 21).
	"Waits for the time set with the CTOF command elapses.

CP
Halt and clear all active or buffered IR commands.
	Halt and clear all active or buffered IR commands, and then send a single IR pulse. Pulse and wait times can be set with the 'CTON' and 'CTOF' commands.
	Syntax:
	`SEND_COMMAND <DEV>,"'CP',<code>"`
	Variables:
	code = IR port's channel value 0 - 252 (253 - 255 reserved).
	Example:
	`SEND_COMMAND dvRXIR,"'CP',2"`
	Clears the active/buffered commands and pulses IR port's channel 2.

IR SEND_COMMANDs (Cont.)	

CTOF
Set duration of Off time between IR pulses.
	Set the duration of the Off time (no signal) between IR pulses for channel and IR function transmissions. Off time settings are stored in non-volatile memory. This command sets the delay time between pulses generated by the 'CH' or 'XCH' send commands in tenths of seconds.
	Syntax:
	`SEND_COMMAND <DEV>,"'CTOF',<time>"`
	Variables:
	time = 0 - 255. Given in 1/10ths of a second. Default is 5 (0.5 seconds).
	Example:
	`SEND_COMMAND dvRXIR,"'CTOF',10"`
	Sets the off time between each IR pulse to 1 second.

CTON
Set total time of IR pulses transmitted.
	Set the total time of IR pulses transmitted and is stored in non-volatile memory. This command sets the pulse length for each pulse generated by the 'CH' or 'XCH' send commands in tenths of seconds.
	Syntax:
	`SEND_COMMAND <DEV>,"'CTON',<time>"`
	Variables:
	time = 0 - 255. Given in 1/10ths of a second. Default is 5 (0.5 seconds).
	Example:
	`SEND_COMMAND dvRXIR,"'CTON',20"`
	Sets the IR pulse duration to 2 seconds.

IROFF
Halt and clear active IR commands on a port.
	Halt and clear all active or buffered IR commands being output on the designated port.
	Syntax:
	`SEND_COMMAND <DEV>,"'IROFF'"`
	Example:
	`SEND_COMMAND dvRXIR,"'IROFF'"`
	Immediately halts and clears all IR output signals on the IR port.

SP
Generate a single IR pulse.
	You can use the 'CTON' to set pulse lengths and the 'CTOF' for time Off between pulses.
	Syntax:
	`SEND_COMMAND <DEV>,"'SP',<code>"`
	Variables:
	code = IR code value 1 - 252 (253-255 reserved).
	Example:
	`SEND_COMMAND dvRXIR,"'SP',25"`
	Pulses IR code 25 on IR port on RX.

XCH Transmit IR codes.	Transmit the selected channel IR codes in the format/pattern set by the 'XCHM' send command. Syntax: `SEND_COMMAND <DEV>,"'XCH <channel>'"` Variables: channel = 0 - 999. Example: For detailed usage examples, refer to the 'XCHM' command.

IR SEND_COMMANDs (Cont.)	

XCHM
Changes the IR output pattern for the 'XCH' send command.
	Syntax:
	`SEND_COMMAND <DEV>,"'XCHM-<extended channel mode>'"`
	Variables:
	extended channel mode = 0 - 4.
	Example:
	`SEND_COMMAND dvRXIR,"'XCHM 3'"`
	Sets the IR device's extended channel command to mode 3.
	Mode 0 Example (default): [x][x]<x><enter>
	`SEND_COMMAND dvRXIR,"'XCH 3'"`
	Transmits the IR code as 3-enter.
	`SEND_COMMAND dvRXIR,"'XCH 34'"`
	Transmits the IR code as 3-4-enter.
	`SEND_COMMAND dvRXIR,"'XCH 343'"`
	Transmits the IR code as 3-4-3-enter.
	Mode 1 Example: <x><x><x><x><enter>
	`SEND_COMMAND dvRXIR,"'XCH 3'"`
	Transmits the IR code as 0-0-3-enter.
	`SEND_COMMAND dvRXIR,"'XCH 34'"`
	Transmits the IR code as 0-3-4-enter.
	`SEND_COMMAND dvRXIR,"'XCH 343'"`
	Transmits the IR code as 3-4-3-enter.
	Mode 2 Example: <x><x><x>
	`SEND_COMMAND dvRXIR,"'XCH 3'"`
	Transmits the IR code as 0-0-3.
	`SEND_COMMAND dvRXIR,"'XCH 34'"`
	Transmits the IR code as 0-3-4.
	`SEND_COMMAND dvRXIR,"'XCH 343'"`
	Transmits the IR code as 3-4-3.
	Mode 3 Example: [[100][100]....]<x><x>
	`SEND_COMMAND dvRXIR,"'XCH 3'"`
	Transmits the IR code as 0-3.
	`SEND_COMMAND dvRXIR,"'XCH 34'"`
	Transmits the IR code as 3-4.
	`SEND_COMMAND dvRXIR,"'XCH 343'"`
	Transmits the IR code as 100-100-100-4-3.
	Mode 4 Example:
	Mode 4 sends the same sequences as the 'CH' command.
	Only use Mode 4 with channels 0 - 199.

Serial SEND_COMMANDs

The Serial Commands are for RX02N Port 2. To send a string out port 2 (to control a 3rd party device), use SEND_STRING. These commands are for the swticher only.

Serial SEND_COMMANDs	

CHARD
Set delay time between transmitted characters in microseconds.
	Set the delay time between all transmitted characters to the value specified (in 100 Microsecond increments).
	Syntax:
	`SEND_COMMAND <DEV>,"'CHARD-<time>'"`
	Variables:
	time = 0 - 255. Measured in 100 microsecond increments.
	Example:
	`SEND_COMMAND dvRXRS232,"'CHARD-10'"`
	Sets a 1 millisecond delay between all transmitted characters.

CHARDM
Set delay time between transmitted characters in milliseconds.
	Set the delay time between all transmitted characters to the value specified (in 1 millisecond increments).
	Syntax:
	`SEND_COMMAND <DEV>,"'CHARDM-<time>'"`
	Variables:
	time = 0 - 255. Measured in 1 millisecond increments.
	Example:
	`SEND_COMMAND dvRXRS232,"'CHARDM-10'"`
	Sets a 10-millisecond delay between all transmitted characters.

GET BAUD
Get the Rx serial port's current communication parameters.
	The port sends the parameters to the device that requested the information.
	Syntax:
	`SEND_COMMAND <DEV>,"'GET BAUD'"`
	Example:
	`SEND_COMMAND dvRXRS232,"'GET BAUD'"`
	The port responds with:
	`"PORT <port #>,<baud>,<parity>,<data>,<stop>"`
	For example:
	`Device 1,38400,N,8,1`

RXCLR
Clear all characters in the receive buffer.
	Clear all characters in the receive buffer waiting to be sent to the Master.
	Syntax:
	`SEND_COMMAND <DEV>,"'RXCLR'"`
	Example:
	`SEND_COMMAND dvRXRS232,"'RXCLR'"`
	Clears all characters in the Rx serial port receive buffer waiting to be sent to the Master.

RXOFF
Disable the transmission of incoming received characters to the Master.
	This option is disabled by default.
	Syntax:
	`SEND_COMMAND <DEV>,"'RXOFF'"`
	Example:
	`SEND_COMMAND dvRXRS232,"'RXOFF'"`
	Stops the Rx serial device from transmitting received characters to the Master.

Serial SEND_COMMANDs (Cont.)	

RXON
Start transmitting received characters to the Master.
	Enables sending incoming received characters to the Master. This command is automatically sent by the Master when a 'CREATE_BUFFER' program instruction is executed.
	Syntax:
	`SEND_COMMAND <DEV>,"'RXON'"`
	Example:
	`SEND_COMMAND dvRXRS232,"'RXON'"`
	Sets the Rx serial port to transmit received characters to the Master.

SET BAUD
Set the serial communication parameters.
	Syntax:
	`SEND_COMMAND <DEV>,"'SET BAUD <baud>,<parity>,<data>, <stop>'"`
	Variables:
	baud = baud rates are: 115200, 57600, 38400, 19200, 9600, 4800, 2400, 1200.
	parity = N (none), O (odd), E (even).
	data = 7 or 8 data bits.
	stop = 1 and 2 stop bits.
	Example:
	`SEND_COMMAND dvRXRS232,"'SET BAUD 19200,N,8,1'"`
	Sets the Rx serial port's communication parameters to 19200 baud, no parity, 8 data bits, 1 stop bit.

TXCLR
Clear transmit out buffer.
	Stop and clear all characters waiting in the transmit out buffer and stops transmission.
	Syntax:
	`SEND_COMMAND <DEV>,"'TXCLR'"`
	Example:
	`SEND_COMMAND dxRXRS232,"'TXCLR'"`
	Clears and stops all characters waiting in the Rx serial port transmit buffer.

Appendix A

Available Pixel Display and Refresh Rates

The available pixel display and refresh rates for the DVX-2100HD are listed in the following sections.

DVI and VGA Supported Input Resolutions

DVI and VGA Supported Input Resolutions							
Resolution Name	*Horizontal Active Pixels*	*Vertical Active Lines*	*Refresh (Hz)*	*DVI Support*	*VGA Support*	*Comments*	*Video Standard*
640x400@85	640	400	85	✓	✓		VESA DMT
640x480@60	640	480	60	✓	✓		VESA DMT
640x480@72	640	480	72	✓	✓		VESA DMT
640x480@75	640	480	75	✓	✓		VESA DMT
640x480@85	640	480	85	✓	✓		VESA DMT
720x400@85	720	400	85	✓	✓		VESA DMT
720x480p@60	720	480	60	✓	✓	480p	CEA 861
720x480p@120	720	480	120	✓	✓	480p	CEA 861
720x480p@240	720	480	240	✓	✓	480p	CEA 861
720x576p@50	720	576	50	✓	✓	576p	CEA 861
720x576p@100	720	576	100	✓	✓	576p	CEA 861
720x576p@200	720	576	200	✓	✓	576p	CEA 861
800x500@60	800	500	60	✓	✓		VESA CVT
800x600@56	800	600	56	✓	✓		VESA DMT
800x600@60	800	600	60	✓	✓		VESA DMT
800x600@72	800	600	72	✓	✓		VESA DMT
800x600@75	800	600	75	✓	✓		VESA DMT
800x600@85	800	600	85	✓	✓		VESA DMT
848x480@60	848	480	60	✓	✓		VESA DMT
848x480@75	848	480	75	✓	✓		VESA CVT
848x480@85	848	480	85	✓	✓		VESA CVT
1024x640@60	1024	640	60	✓	✓		VESA CVT
1024x768@60	1024	768	60	✓	✓		VESA DMT
1024x768@70	1024	768	70	✓	✓		VESA DMT
1024x768@75	1024	768	75	✓	✓		VESA DMT
1024x768@85	1024	768	85	✓	✓		VESA DMT
1152x864@75	1152	864	75	✓	✓		VESA DMT
1280x720@50	1280	720	50	✓	✓		CEA 861
1280x720@60	1280	720	60	✓	✓		VESA CVT
1280x720p@60	1280	720	60	✓	✓	720p	CEA 861
1280x720p@100	1280	720	100	✓	✓	720p	CEA 861
1280x720p@120	1280	720	120	✓	✓	720p	CEA 861
1280x768@59	1280	768	59	✓	✓		VESA nCVT
1280x768@60	1280	768	60	✓	✓		VESA DMT
1280x768@74	1280	768	74	✓	✓		VESA DMT

DVI and VGA Supported Input Resolutions (Cont.)							
Resolution Name	*Horizontal Active Pixels*	*Vertical Active Lines*	*Refresh (Hz)*	*DVI Support*	*VGA Support*	*Comments*	*Video Standard*
1280x768@75	1280	768	75	✓	✓		VESA DMT
1280x768@84	1280	768	84	✓	✓		VESA DMT
1280x768@85	1280	768	85	✓	✓		VESA DMT
1280x800@60	1280	800	60	✓	✓		VESA CVT
1280x960@60	1280	960	60	✓	✓		VESA DMT
1280x960@85	1280	960	85	✓	✓		VESA DMT
1280x1024@60	1280	1024	60	✓	✓		VESA DMT
1280x1024@75	1280	1024	75	✓	✓		VESA DMT
1280x1024@85	1280	1024	85	✓	✓		VESA DMT
1360x764@60	1360	764	60	✓	✓		VESA CVT
1360x768@60	1360	768	60	✓	✓		VESA DMT
1440x900@60	1440	900	60	✓	✓		VESA DMT
1440x900@75	1440	900	75	✓	✓		VESA DMT
1440x900@85	1440	900	85	✓	✓		VESA DMT
1400x1050@60	1400	1050	60	✓	✓		VESA DMT
1400x1050@75	1400	1050	75	✓	✓		VESA DMT
1600x1200@60	1600	1200	60	✓	✓		VESA DMT
1680x1050@60	1680	1050	60	✓	✓		VESA CVT
1920x1080i@50	1920	540	50	✓		DVI only - 1080i	CEA 861
1920x1080i@60	1920	540	60	✓		DVI only - 1080i	CEA 861
1920x1080p@25	1920	1080	25	✓	✓	1080p	CEA 861
1920x1080p@30	1920	1080	30	✓	✓	1080p	CEA 861
1920x1080p@50	1920	1080	50	✓	✓	1080p	CEA 861
1920x1080@60	1920	1080	60		✓	VGA only	VESA CVT
1920x1080p@60	1920	1080	60	✓	✓	1080p	CEA 861
1920x1200@60	1920	1200	60	✓	✓	Reduced Blanking	VESA CVT

Composite and S-Video Supported Input Resolutions

Composite and S-Video Supported Input Resolutions					
Resolution Name	*Horizontal Active Pixels*	*Vertical Active Pixels*	*Refresh (Hz)*	*Comments*	*Video Standard*
720x480i@60	720	240	60	480i	CEA
720x576i@50	720	288	50	576i	CEA

Component Video Supported Input Resolutions

Component Video Supported Input Resolutions					
Resolution Name	*Horizontal Active Pixels*	*Vertical Active Pixels*	*Refresh (Hz)*	*Comments*	*Video Standard*
720x480i@60	720	240	59.9	480i	CEA 770.2
720x480p@60	720	480	59.9	480p	SMPTE 293M CEA 770.2 ITU-R BT.1358
720x576i@50	720	288	50	576i	
720x576p@50	720	576	50	576p	ITU-R BT.1358
1280x720p@50	1280	720	50	720p50	SMPTE 296M
1280x720p@60	1280	720	59.9	720p	SMPTE 296M CEA 770.3
1440x960p@60	1440	960	59.9	960p	
1920x1080i@50	1920	540	50	1080i50	SMPTE 274M
1920x1080is@50	1920	540	50	1080i_S295M	SMPTE 295M
1920x1080i@60	1920	540	59.9	1080i	SMPTE 274M CEA 770.3
1920x1080p@50	1920	1080	50	1080p50	SMPTE 274M
1920x1080ps@50	1920	1080	50	1080p_S295M	SMPTE 295M
1920x1080p@60	1920	1080	59.9	1080p	SMPTE 274M

DVI and VGA Supported Output Resolutions

DVI and VGA Supported Output Resolutions					
Resolution Name	*Horizontal Active Pixels*	*Vertical Active Pixels*	*Refresh (Hz)*	*Comments*	*Video Standard*
640x480@60	640	480	60		VESA DMT
640x480@72	640	480	72		VESA DMT
640x480@75	640	480	75		VESA DMT
800x600@60	800	600	60		VESA DMT

800x600@72	800	600	72		VESA DMT
800x600@75	800	600	75		VESA DMT
1024x768@60	1024	768	60		VESA DMT
1024x768@70	1024	768	70		VESA DMT
1024x768@75	1024	768	75		VESA DMT
1280x720p@60	1280	720	60	720p	CEA 861
1280x800@60	1280	800	60		VESA CVT
1280x1024@60	1280	1024	60		VESA DMT
1360x768@60	1360	768	60		VESA DMT
1440x900@60	1440	900	60		VESA CVT
1600x1200@60	1600	1200	60		VESA DMT
1680x1050@60	1680	1050	60		VESA CVT
1920x1080@60	1920	1080	60	1080	VESA CVT
1920x1080p@60	1920	1080	60	1080p	CEA 861
1920x1200@60	1920	1200	60	Reduced Blanking	VESA CVT-R

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